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LECTURES
ON THE
THEORY AND PRACTICE OF MEDICINE;

NOW IN COURSE OF DELIVERY AT THE THEATRE OF ANATOMY AND MEDICINE, WEBB-STREET, SOUTHWARK.

BY

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ON FEVER.

FEVER.—*The question of the locality of fever discussed. Opinions of Sydenham, Cullen, Clutterbuck, Broussais, Louis, and Andral. The true state of the question determined. The history, symptoms, and organic effects of fever arranged and classified. Advantages of this arrangement.*

IRRITATION.—*It has been frequently mistaken for inflammation. Distinguishing characters. Cases exemplifying the difference between inflammation and irritation, and the effects of proper treatment.*

GENTLEMEN:—I have conducted you, in a *theoretical* point of view, through the important subjects of *topical* diseases, viz., Inflammation, Tubercle, Melanosis, Encephaloid, Scirrhous, and other Tumours; and I trust I have stored your minds with a series of practical observations and facts which will be useful to you in your future professional career, as well as in your approaching examinations. The important duty now devolves upon me of leading you, in the same manner, through the subjects of diseases of the *system*, and especially of Fever, of Irritation, and of the Morbid Effects of Loss of Blood and of Mercury.

Scarcely less important than the subject of inflammation is that of Fever.

The first question in reference to fever, is this:—Can fever exist without some topical inflammation as its immediate or proximate *cause*? In other words, can fever be idiopathic or primary? or is it always and necessarily symptomatic?

Sydenham, Cullen, and other writers on medicine, of the last and a former century, did not hesitate to establish an order of idiopathic fevers; but their neglect of morbid anatomy prevents us from relying upon their opinions.

Recently two attempts have been made, one in this country, the other in France, to establish the localisation of fevers.

Dr. Clutterbuck has contended that continued fever is, in fact, a peculiar inflammation of the brain; M. Broussais, that it is a "gastro-entérite."

On the other hand, M. Louis has demonstrated that morbid changes in the encephalon, and in the mucous membrane of the stomach and of the intestine, are *equally* frequent in other diseases, and in typhus fever; and M. Andral and M. Louis have proved, that the cerebral symptoms bear no relation to the detectible morbid appearances either in the encephalon or in the mucous membrane of the alimentary canal.

M. Louis states—"Whether we study the brain, or its envelopes, we observe the same lesions, the same conditions, and in nearly the same proportions, in subjects who have died of typhus, and in those who have fallen victims to other diseases. No one of these lesions, no one of these conditions, therefore, is peculiar to typhus. This result, doubtless unexpected, appears to me to confirm the opinion, that the infiltration of the sub-arachnoid tissue, the injection of the pia-mater, and the rose-colour of the substance of the brain, are slight, and the result of the last moments or days of the patient's existence."—(T. i., p. 395.)

In reference to the condition of the stomach and intestine, M. Louis observes:—"Not only are the the alterations of the mucous membrane of the stomach the same, in the subjects carried off by typhus, and by other acute diseases, but the proportion is nearly so too.

"Thus softening and thinness were found in one-fifth of the cases of typhus, and one-sixth of those of other diseases not less acute. Ulcerations occurred in one-twelfth of the cases of typhus, and in one-twenty-fourth of those of other acute diseases.

"Simple softening occurred in one-third and in one-fourth of these cases respectively.

"The mammelated state in a similar but inversed proportion.

"Lastly, the mucous membrane was natural in two-sevenths of the cases of typhus, and in one-fifth of those of other acute diseases."—(T. i., p. 181.)

M. Louis concludes, that typhus is no more a gastro-entérite than pneumonia is a gastro-pneumonie (p. 182); and that, with the exception of the peculiar affection of Peyer's glands, all other affections of the mucous membrane of the small intestines exist also in other acute diseases.—(p. 222.)

In regard to the cerebral symptoms, M. Andral observes:—"In the fevers termed essential (idiopathic), the condition of the nervous centres, observed post-mortem, cannot explain the symptoms observed during life." And in a note, he adds, "This opinion, which I expressed in my first edition of this work, has been constantly confirmed by my subsequent researches; and now I am enabled to support it by the recent observations of M. Louis, who observes, the appearances of the brain cannot explain the symptoms of which it has been the source, any more than those of the mucous membrane of the stomach can explain the anorexia and other gastric symptoms in many cases."—(Ed. 2., t. ii. p. 593.)

If, therefore, we be guided by the facts of the case, we shall conclude that fever is neither an encephalitis nor a gastro-entérite.

M. Andral began the first edition of his "Clinique Medicale" with these observations:—"Whether the idiopathic fever of nosologists can or cannot be considered as the constant result of local affection, it seems proper, in the actual condition of the science, to designate this class of diseases by the term *Fevers;* in this manner we do not prejudge their nature, and we restrain ourselves to the strict observation of facts." Such is the opinion taught by M. Lerminier in his lectures, who speaks [of "*fever, continued or intermittent, with or without evident local affection of the organs of the head, chest, or abdomen.*"

I think it unfortunate that M. Andral has relinquished this mode of viewing the subject in his second edition. He is led into various difficulties and even contradictions; he constitutes a class, for instance, of "*Febrile* Diseases of the Digestive Tubes," with a *sub*-class of "Fevers *without* appreciable Disease of the Digestive Tube;" and a second class of "*Apyrectic* Diseases of the Digestive Tube;" whereas peritonitis, and other diseases, in this class, cannot be said to be without fever.

The opinion of M. Lerminier, and the original opinion of M. Andral, is, indeed, the safest. Certain diseases form a class, and are termed fevers; their causes, nature, complications, mode of prevention and treatment, &c., become objects of investigation.

Having rejected the notions of Dr. Clutterbuck, M. Broussais, &c., in reference to inflammation of the encephalon, or of the mucous membrane of the stomach and intestines, as the essential cause of fever, I must now notice another subject of extreme interest: it has been shown by MM. Petit and Serres, Bretonneau, Cruveilhier, Andral, but especially by M. Louis, that a peculiar disease of the clustered and solitary glands of the intestine, is the constant morbid appearance of *typhus*. M. Andral has, indeed, adduced a series of cases which he regards as exceptions to this conclusion; it is plain, however, that these are no real exceptions, but that, in fact, other diseases have been ranked by M. Andral as cases of typhus.

M. Bouillaud has renewed the controversy on the subject of the localisation of fever, and of M. Broussais's success in accomplishing this object, by considering this disease of the glands of the intestines as a gastro-entérite, and the local cause of fever.

This dispute is one of mere terms, if it be upon the question whether the affection of the glands of the intestine be a gastro-entérite, and of terms used in a very vague and general sense.

To those who still contend for the localisation of fevers, I would put these questions: How do you view rubeola, scarlatina, variola, &c.? Are these eruptive fevers symptomatic, or consecutive, and dependant upon the condition of the air passages, the posterior nares and fauces, the skin, respectively? or are these local affections, not the local *cause*, but simply part and parcel of the whole disease?—they are sometimes absent, or nearly absent, altogether! As you view these febrile affections then, so regard the synochus and the typhus fevers, of which I am about to treat, and there will be an end of all dispute. In the former of these, there is frequently no complication, except herpes oris; in the latter, the disease of the intestinal glands must be considered as bearing the same relation to the fever, as the pustules on the external and internal surfaces do to that of variola.

To prosecute this dispute any farther, would be alike vain and unprofitable. It will be more useful to us to learn to recognise these various diseases, to study every part, to watch for injurious or dangerous complications, and to investigate their *influence*, in their turn, upon the febrile symptoms, and upon the general system.

Such is a brief sketch of our present knowledge on the subject of fevers. I will now briefly state my own opinion:—

1. I consider that there is an order of fevers, induced by fatigue, anxiety, watching, and other similar causes, which vary with the age, sex, and constitution of the

patient, and which may be *complicated* with local affection, but in which such local affection is by no means essential as the *cause* of the fever. I shall call this order of fevers, which I shall describe very particularly hereafter, *Synochus*, or common fever, from ordinary causes.

2. There appears to be another fever, more peculiar in its causes, nature, symptoms, and morbid appearances, and in the persons whom it attacks, which is true *typhus*. In this there is always disease of the glands of the intestines; and there are other morbid changes, less constant, and less essential.

3. There is a third kind of fever, not less peculiar in its source, symptoms, morbid anatomy, and treatment, viz. *Intermittent*, or Ague; it is usually induced by marsh miasmata, or effluvia, and it is apt to induce, in its turn, disease of the spleen, and dropsy.

This appears to me to be a simple view of a complicated subject. The question of the essential idiopathic or, symptomatic nature of fever is resolved at once: synochus may exist with or without topical complication; typhus seems to have the same relation to disease of the glands of the intestines as variola has to the pustules—to disease of the glands of the skin; ague is mysteriously associated with the function and condition of the spleen. In all this there is only fact; there is no hypothesis.

Chills, succeeded by heat of skin, flushing, frequent pulse, and, in the remittent and intermittent forms especially, by perspiration, are the principal symptoms of fever. The more continued fevers pursue their course *æquo tenore;* the remittent, and especially the intermittent, subside, and recur, at various intervals.

Here I must beg your particular attention to a classification of the circumstances involved in—

I. The History,
II. The Symptoms, and
III. The Organic Effects

of fevers, and not of fevers only, but of all other diseases:

I. The History. This comprises
1. *The Causes;* and these are—
A. The Constitutional, or Predisposing, *viz.*:—
a. The age.
b. The sex.
c. The habits, profession, mode of life, place of abode, &c.
d. Hereditary predisposition, or taint, previous diseases, &c.
B. The External, or Exciting: these are—
a. Epidemic: as the season, the weather, contagion, &c.
b. Endemic: as miasma, malaria; the air, the water, the food; a very high or low situation, &c.
c. Occasional; as cold, wet, fatigue; change of diet, of habits, of abode, &c.
2. *The Course;* this involves—
a. The duration, in reference to which the disease may be Sudden, acute, insidious, chronic.
b. The effects on the flesh, the strength, &c.
c. The effects on the internal structures.
d. The changes, progress, decline, complications, metastasis, sequelæ, &c.
e. The effects of remedies.

II. The Symptoms, or Morbid Affections,
1. *Of the General System,*
A. The Countenance.
a. The capillary circulation.
b. The cellular substance.
c. The muscular system.
d. Some particular features.
e. The general expression.
f. The cuticular surface.
B. The General Surface.
a. The temperature.
b. The state of dryness, or moisture; of tumidity, or shrinking; or of roughness or smoothness of the skin.
c. The colour.
d. The occurrence of emaciation, or of œdema and anasarca.
e. The conditions of the hands and feet.
C. The Attitude.
a. The postures and motions of the body.
b. The state of muscular debility, power, contraction, and motion.
c. Some particular actions.
d. The general manner of the patient.

2. *Of Individual Organs, or Systems.*
A. The Nervous System.
a. The sensations.
b. The intellectual functions.
c. The muscular action.
d. The sleep.
B. The Circulatory System.
a. The cardiac.
b. The arterial.
c. The capillary.
d. The venous, and
e. The splenic circulation.
C. The Respiratory System.
a. The laryngal,
b. Tracheal,
c. Bronchial,
d. Vesicular, dyspnœa, cough, expectoration.
e. The voice, &c.
D. The Physical Conditions of the Thorax detected by
a. Inspection.

b. Percussion.
c. Auscultation.
The respiration:— vesicular, bronchial, cavernous. The various rattles: — vesicular, bronchial, cavernous. The voice:—bronchophony, pectoriloquism, œgophony. Cough:— tubal, cavernous. The beat of the heart; its diffusion, impulse, sounds, rhthym.

E. The Digestive System involving:
a. The tongue, &c.
Its surface, form, papillæ, colour. Its mode of being protruded. The teeth, gums, and internal parts of the cheeks. The taste. The breath, &c.
b. The pharynx and œsophagus.
c. The alimentary canal.
d. Examination per rectum.

F. The Urinary System.
a. Renal,
b. Ureteric,
c. Vesical pain, &c.
d. The sound, the catheter.
e. The urine and its deposits, &c.

G. The Uterine System.
a. Uterine,
b. Ovarial pain, tumour, &c.
c. Examination per vaginam; the use of M. Ricord's speculum.

H. Physical Condition of the Abdomen detected by—
a. Inspection.
b Pressure.
c. Percussion, &c.

III. The Morbid Anatomy:—
1. *Of the Mucous Membranes*:
A. Injection.
B. Eruption — ulceration, sloughing, &c.
C. Softening; induration; hypertrophy; mammelated state.
D. Effusion—of mucus, blood, pus.
2. *Of the Serous Membranes*:
A. Injection.
B. Effusion—of lymph, serum, blood, pus.
3. *Of the Parenchyma*:
A. Injection.
B. Softening; induration.
C. Hypertrophy; atrophy.
D. Suppuration; abscess; infiltration.
4. *In all these Textures*:
A. Hæmorrhagy.
B. Tubercles.
C. Melanosis.
D. Encepalosis; scirrhus; matière coloïde.
E. Fibrous tumours.
F. Cysts.
G. Hydatids, &c. &c.

Allow me particularly to draw your attention to M. Louis's admirable, nay, inimitable "Essay on Clinical Instruction." It is translated by Mr. Martin. It is a mere essay, but it is stored, absolutely stored, with invaluable directions for the study of clinical medicine. Read it, and read M. Louis's works, formed upon that model, and tell me whether he is not entitled to the epithet which I have given him—the Bacon of Medicine. The plan M. Louis sketched for himself was that of a man of genius; the manner in which he executed that plan was that of a man of extraordinary "decision of character." Besides, M. Louis is conscientious and severe, and is absolutely imbued by a love of truth. I could state to you some facts which would convince you that this cannot be said of all the *soi disant* observers and philosophers in this country.

Bear the arrangements with which I have presented you in your hands, or, rather, in your heads, whenever you visit a patient with fever, or other disease of the system, or, indeed, with any disease. Look over this arrangement. Observe the countenance, the general surface; the attitude; examine the functions of the organs within the head, thorax, and abdomen. At every visit your object is early to detect any *change*, anything *new* in the symptoms.

Throughout *all* fevers, the office of the physician is to watch and examine daily, for changes, for complications, and to meet them with prompt and efficient remedies. In *each* we are led from experience to expect and to anticipate particular complications: in typhus, we watch the condition of the head, the chest, the abdomen,—the intestine especially; in ague, that of the spleen; in scarlatina, that of the throat and fauces; in rubeola, that of the trachea and bronchia. The early and accurate detection of these complications—*the diagnosis*—is everything.

To ascertain the existence of fever, and of fever of a particular kind even, is easy, compared with the task of detecting early any complication which may occur, and against which, in fact, our most important remedies must be directed.

I have already noticed the difference between the general symptoms in inflammation, and the symptoms of fever. In inflammation we have a permanent stimulus, by which the actions of the system are at once excited and sustained. In fever we have, in the excited actions of the vascular system, a sort of fictitious strength; as we have, in the state of the nervous and muscular systems, a sort of fictitious debility: bloodletting soon induces syncope; but it is borne better eventually, than, from that appearance of debility, might have been expected.

The further description of the modes of *treatment* of fever must be left for the more

extended and *practical* part of this course. The general *principle* of the treatment has been already stated.

ON IRRITATION.

I have a peculiar pleasure in bringing under your notice once more, and more at length, the subject of irritation, and especially of intestinal irritation; for, in the first place, it is a very frequent disease, frequently misunderstood; in the second, I think it is by my own researches that a better knowledge of it has been attained. It is true, to have discovered a new fibre in anatomy, or a new deposit in pathology, would have brought more honour. But I am satisfied with the reward of thinking, that by the distinction which I have instituted, I have abridged human suffering and danger. The morbid affection to which I allude is of very frequent occurrence, and, comparatively with inflammation, little known to the profession. This statement will not be deemed too strong if I am enabled to show that there is a series of cases, not generally distinguished from certain inflammations, and yet very different in their nature, and especially in their reference to the effects of loss of blood.

The cases to which I allude resemble, in their symptoms, the most acute forms of arachnitis, pleuritis, and peritonitis, but especially arachnitis. Yet, instead of possessing the power of resisting the effects of loss of blood belonging to inflammation, there is the utmost degree of susceptibility to those effects. *In inflammation thirty, forty, and even fifty ounces of blood may flow before the slightest deliquium is observed; in cases of irritation there is frequently the most perfect syncope on abstracting nine or ten ounces of blood.*

As I have already stated, the irritation of a calculus in the ureter, or in the hepatic duct, is well known to occasion a remarkable sympathetic affection of the stomach. The introduction of a bougie into the urethra sometimes induces rigor and a complete paroxysm of fever. Uterine irritation is not less frequently the cause of extraordinary effects upon the system generally, and upon various organs.

But of all the sources of sympathetic morbid affections, irritation in the stomach and bowels appears to be the most common, and certainly not the least important. Indigestible substances taken, and disordered feculent matter retained, are the frequent sources of that combined affection of the head and the stomach, termed sick headach.

If such effects of local irritation upon distant organs, then, be universally known and admitted, it cannot be considered as extraordinary that others, less recognised, should exist. But such a point is to be established by facts, not by argument. I proceed, therefore, to detail some cases, which will, I doubt not, if perused with attention and without prejudice, fully convince the reader of the occurrence of a form of disorder hitherto overlooked, or mistaken for other diseases, but very distinct, and very important to be distinguished.

The most frequent cause of this affection is a disordered state of the contents of the colon; the next is, some indigestible substance taken into the stomach. But as the mere presence of a calculus in the ureter is not always sufficient alone to induce an attack of pain and vomiting, so a deranged condition of the intestinal contents will not, alone, induce an attack of the morbid affection which I am about to describe; in general some superadded cause, some shock sustained, or some effort made by the system, is necessary to rouse into activity the cause of irritation, otherwise dormant. In the same manner indigestible substances may frequently be taken with impunity, when the health is unimpaired, but if the system be under the influence of shock, or effort, or of nervous or vascular excitement or exhaustion, a cause of disorder which might have been inert in other circumstances, proves of frightful activity.

The effects of intestinal or nervous irritation, are chilliness, varying from coldness of the extremities to extreme rigor, followed by great heat of the surface, and symptoms resembling those of arachnitis or peritonitis, singly or successively, in their most acute forms, but especially arachnitis; more rarely there is pain, resembling that of pleuritis; more rarely still, a peculiar pain passing along one side of the neck to the shoulders; and occasionally, generally after bloodletting, there is palpitation of the heart.

It must be regarded as extraordinary that such marked affections have not been discriminated, and traced to their proper source. But I am persuaded that they are, to this day, confounded with inflammation of the organs chiefly affected, to the great injury and even danger of the patient. It is, indeed, extraordinary how slow the human mind is to receive new impressions, even of the truth, wedded, as it usually is, to first opinions.

These observations apply particularly to that form of this affection which resembles arachnitis. There are few who distinguish it from arachnitis itself. I have, however, witnessed some very interesting scenes, and not less interesting convictions of the truth of the views which I have taken of this subject, in cases which have occurred in the persons or in the families of medical gentlemen themselves. Two of these cases I propose to detail briefly, premising, that the mere fact of the most acute symptoms, resembling those of arachnitis, or peritonitis, having yielded without the abstraction of blood altogether, or without a shadow of

that degree of bloodletting which is absolutely necessary for the cure of these inflammatory diseases, is alone sufficient to convince us that there is a case of morbid affection resembling in its symptoms, but differing in its nature and treatment, from those diseases.

Amongst the earlier cases of the effects of irritation, which excited my attention, was that of Mrs. ——, a rather delicate, married woman, aged thirty-five. When I was first called to this patient she appeared to labour under inflammation of the peritoneum; the symptoms of which were so severe as apparently to demand the repeated employment of the lancet, and application of leeches, so that the patient lost about thirty-five or forty ounces of blood; the bowels were freely purged, the stools were very fœtid.

All the symptoms were removed on the third day; I only visited my patient once, and I had every hope of a speedy and secure convalescence. I was, however, disappointed. Early on the succeeding day I received an urgent request to see her. She had been seized with severe pain of the head, especially over the eyebrows, attended by beating and throbbing, and by the most urgent intolerance of light, so that the eyes could not be opened for a moment for examination; the pain was increased on attempting to sit up erect; the countenance was pale and sallow; the pulse full and frequent; there was no faintness or sighing.

As this case occurred very early in my investigation of the effects of irritation, I hesitated in determining whether the symptoms were such as I had already witnessed in one or two cases, as arising from that cause, or were indicative of inflammation within the head. I prescribed a draught with thirty drops of the tinctura opii and of the spiritus ammoniæ aromaticus, and called again in an hour and a half, not without anxiety. I was greatly relieved to find my patient better in every respect, able to bear the light, suffering much less pain, and having enjoyed a comfortable sleep after a night of wakefulness and distress. Aperient medicine was administered, and, after the full evacuation of the bowels, light nourishment, and a repetition of the draught with tinctura opii and spiritus ammoniæ aromaticus, whilst a cold lotion was applied to the head.

On the succeeding day Mrs. —— was better in every respect, but complained of any noise. On the next day she was comparatively well, only suffering from vertigo on raising the head.

From this time the recovery was progressive and uninterrupted, the utmost care being taken to regulate the bowels and the diet.

Mr. ——, aged 19, complained on Sunday evening, September the 29th, of pain shooting through the region of the stomach to the back, recurring at intervals; he took some ginger tea, was relieved, went to bed, rose in the morning looking pale, but expressing himself better, went into the counting-house, and ate his dinner of cold roast beef, as usual.

About five o'clock in the afternoon of the 30th, he became afflicted with coldness of the hands and feet, slight flushing of the face, violent and constant pain of the crown, or, as he said, of the bones of the head, numbness of the right hand, and contraction of the right side of the lip, and slight incoherence of manner; he answered hastily and sharply to any questions, and experienced restlessness, and extreme intolerance of light or noise, and desired that the shutters might be accurately closed, and that the door should not be moved. About two hours after this attack sickness came on, a great load was vomited, and he became more collected, but still complained of pain of the bones of his head, and of the slightest light or noise. In another hour he fell into an uneasy slumber, breathed hard through the nostrils, awoke in half an hour a little easier, his hands and feet becoming warmer.

He took a cup of Bohea tea, and a dose of calomel and jalap, at ten o'clock P.M.; he lay more composed, then dozed at intervals, but always complained on awaking of pain of the head; at two o'clock he slept more quietly; his medicine acted three times; he rose in the morning, much refreshed, but looking dull and sallow. He continued to recover during the day, rode out, ate his dinner, but still looked ill.

The next patient, an intelligent surgeon, tall and robust, had undergone a painful operation on the anus, and had suffered much, for six days, on passing the fæces and on dressing the wound; he had kept himself low, and had passed restless nights as well as painful days. On the morning of the sixth day, after some exertion, the feet and legs became extremely cold; the surface afterwards became generally heated, and the mouth clammy; the face was flushed, the skin sore, and the eyeballs particularly tender; the pulse rose to 96. In the afternoon the chillness returned, and was followed by heat, throbbing in the temples, and pain in the head, with flying stitches in the side; the pulse was 112. Sixteen ounces of blood were taken from the arm; faintness and perspiration were induced, the throbbing ceased, but the pain continued, and the pulse was 116; the patient felt overcome, became restless, and affected with vertigo on moving, and frequent sighing.

At night the head became distractingly painful; the faintness exceedingly distressing. I found my patient with wet cloths applied over the forehead and eyes. The question of farther bloodletting, or of the application of leeches, was proposed to me.

I was persuaded, however, that the affection of the head depended upon intestinal and nervous irritation. I therefore prescribed a large enema of gruel and oil, with sal volatile, and nourishment.

The enema induced vomiting and a copious alvine evacuation. On the following day all symptoms of affection of the head had subsided.

In this case the natural strength of the patient, the violence, and even urgency, of the symptoms, the recovery without farther bloodletting, and the extreme susceptibility to the effects of loss of blood, are all remarkably displayed, and form a striking contrast with the characters of true arachnitis.

The following case is not a less interesting illustration of this morbid affection.

Mrs. ——, aged 24, and of moderate strength, had suffered from an attack similar to the one about to be described, some months previously. She remained well until excited to undue exertion by company and visiting. She then began to complain of pain of the head, of a sense of fatigue, and of being unrefreshed by her sleep.

Two days afterwards the hands and feet became very cold alternately with great heat of the skin; and the pain of the head had augmented.

In two days more the symptoms had still farther increased; the coldness of the extremities was attended by great pain, and succeeded by extreme dryness and intense heat; there was severe pain of the head and along the right side of the neck; the tongue was loaded and œdematous; the stomach affected with nausea; the bowels disordered, and the fæces scybalous.

During two other days these symptoms only augmented, the patient still attempting to remain up; the pain of the head increased and became attended with great intolerance of light and throbbing, unabated by aperient medicines, and by farther rest. It was thought right to take a little blood. Mrs. —— was therefore put in the erect posture, and the stream allowed to flow until faintishness took place; complete syncope was produced by abstracting ten ounces of blood. The distressing symptoms still, however, continued the next day, when medicines were administered which induced vomiting and free evacuations of scybalous and disordered fæces.

From this time the recovery was gradual, but delayed by a disposition to diarrhœa, and by a state of prostration, paleness, and thinness, highly peculiar and characteristic.

In both these cases the symptoms of affection of the head persisted after the bloodletting, and were relieved by sickness and a free evacuation of the bowels. In both the prostration from the bloodletting was extraordinary.

The next case is that of Mrs. ——, a young married lady, in the fourth month of pregnancy, habitually costive. The present attack came on after much fatigue in travelling, and she is stated to have experienced a similar one formerly.

On the 7th of October she complained of pain of the head, and leeches were applied to the temples. On the 8th the pain of the head was more violent, and attended with much throbbing of the temples; and to these symptoms pain of the right side under the breast, a sense of tightness across the chest, and hurry in breathing, were superadded. Twelve ounces of blood were drawn, and an efficient aperient medicine was given, and on the 9th and 10th she was much better, and a saline medicine was prescribed.

On the 11th she was again taken worse after imprudently sitting up; the beating of the temples, tightness across the chest, and difficulty in breathing, returned, unattended by cough. Sixteen ounces of blood were taken from the arm, with great relief, and the aperient medicine was repeated.

The patient was relieved, and continued better on the 12th. In the night of the 13th, the medical attendant received an urgent message to visit his patient, and found her affected with severe pain and beating of the head, great tightness and pain across the chest, and with violent palpitation of the heart. Twelve ounces of blood were taken, and calomel and other aperient medicines given, with considerable relief.

On the 14th a physician was consulted, who prescribed the pil. hydrarg., with an aperient draught. In the night the apothecary was again sent for, all the symptoms having returned, and now, for the first time, with the addition of a slight cough. Eight ounces of blood being drawn, great relief was obtained.

In the night of the 16th, the medical attendant was again sent for; all the symptoms had returned in a still more aggravated form, the pain of the head, tightness across the chest, palpitation, and cough being extremely severe. Eight ounces of blood were drawn without relief; the head was shaved, a cold lotion applied, and a blister ordered for the back of the neck.

On the 17th I saw the patient for the first time: there were much pain and throbbing of the head, which felt benumbed and heavy, as if she could not raise it from the pillow; there had been no sleep; the pupils were extremely small, with intolerance of noise and disturbance of any kind; there were palpitation of the heart, and sometimes faintness and a feeling of sinking or dying; there were a sense of tightness across the chest, oppression in the breathing, and a peculiar tracheal or laryngeal cough; some pain in the region of the uterus, increased by pressure, but no vaginal discharge; the countenance was usually pale, but sometimes flushed; the tongue extremely loaded, and

even black at the back part; the alvine evacuations, on giving purgative medicine, were still, at first, dark-coloured, offensive and scybalous, and afterwards offensive and like yeast; the pulse was 120.

I was forcibly struck by a general but marked resemblance of this case, to those already given, and to others of the same nature which I had witnessed; the depleting plan, already fully adopted and repeated, had proved ineffectual in affording lasting relief: the purgatives hitherto given were, I believed, inefficient. The plan I proposed was, to give efficient purgatives, to restrain their operation by draughts with tinctura opii and spiritus ammoniæ aromaticus, to support the strength by means of nourishment given every hour, or oftener, to procure sleep by anodyne enemata, to guard against exertion or fatigue, noise or disturbance. The recovery was uniformly progressive; there was not even one recurrence of the painful attacks; the symptoms gradually disappeared, the pulse becoming natural, the pupils of the natural size, the head and chest relieved, and the bowels daily but fully moved; quiet sleep, and a good appetite returned.

In six days the patient was convalescent; shortly afterwards she bore a long journey home without any ill consequence, and at the proper time had a safe delivery.

Those forms of this morbid affection, which resemble peritonitis and pleuritis, are equally characterised and distinguished by alternate chill or rigor, and heat, frequency of the pulse, and susceptibility to the effects of loss of blood. They do not occur so frequently or distinctly as the affection of the head. Such cases are, however, occasionally met with. M. Andral has noticed them in his "Clinique Medicale," ed. i. t. i. pp. 51—54.

The detail of these cases will prepare you for the remarks to be made in my next lecture, viz., that the distinction upon which I am insisting is essential to the *safety* of your patients, and not *generally* known in the profession. If you ever have a doubt upon this important point, at least give your patient the advantage and security of the particular plan of bloodletting which I have proposed to you: let *that* determine the *diagnosis* of the disease, and the propriety of *further depletion*.

The last number of the "Memoirs of the Royal Academy of Medecine, Paris," contains a well-written monograph, by M. Rayer, on Glanders in the Human Subject. M. Rayer details eighteen cases of this affection, and has illustrated his paper by some beautifully-coloured drawings. Another memoir, containing six cases of Glanders, may be found in the 18th and 19th numbers of the "Berlin Medical Gazette" for 1837.

LECTURES
ON
MATERIA MEDICA AND THERAPEUTICS;
NOW IN COURSE OF DELIVERY
AT THE
WINDMILL-STREET SCHOOL OF MEDICINE
BY
GEORGE G. SIGMOND, M.D.

ARSENIC. — *Its combinations with oxygen. Properties and effects of the metal. Arsenic first used in India. Dr. Fowler's solution. Efficacy of Arsenic in intermittent fever, elephantiasis, lepra, and cancer. Dangerous effects sometimes produced by this remedy. Baron Dupuytren's preparation of arsenical paste. Mr. Blackadder's experiments. Efficacy of this remedy in cases of periodic tic, chorea and epilepsy; it fails to afford relief in hydrophobia. Examples of poisoning with arsenical vapour.*

GENTLEMEN:—Arsenic is not a metal of such importance, either in science or in the arts, as are those whose properties I have examined; as an instrument, however, by which death may be produced, and as a medicine possessing some marked qualities, it is well worthy your attentive consideration. The metal exists native, in ores; it was formerly called testaceous or scherben cobalt, of which there are some very fine specimens in the fourth case of the collection in the British Museum, from Bohemia, Saxony and Hungary. It is also found in Nature combined with other metals; what is called arsenial pyrites, or mispickel, is a sulphuret of iron and arsenic; from such sources it is obtained by sublimation; this product, when it has undergone a second sublimation, is brought into the market, under the name of white arsenic, to which Fourcroy applied the name of arsenious acid, and which, in the last chemical nomenclature, was called oxide of arsenic, and is commonly known to us under the name of arsenic. This oxide consists of one proportion of metal, and two of oxygen; there is also another combination of oxygen with the metal, in which there are three proportions of the gas, to which, from its stronger acidifying power, the term arsenic acid is applied. The ancients were acquainted with the arsenious acid, or oxide of arsenic.

Avicenna makes mention of the white arsenic; Paracelsus was the first who stated that it might be obtained as a metal; H. Schroeder and Lemery both made examinations of the metal, but Brandt, in 1733, and Macquer, in 1746, first demonstrated that it had its own peculiar characteristics,

by which it was distinguished from all other metallic bodies. Monet obtained a prize from the Academy of Berlin for a dissertation on the subject. Macquer, Scheele, Beecher, Hunkel, all laboured to increase our knowledge, and Bergmann industriously collected into a monograph all that was known of the properties of this metal in its native state, in that of oxide, and in that of ore.

Arsenic, in its brilliant metallic state, is of an iron-grey colour; it soon changes, even in the cold, upon exposure to the atmospheric air. It has a very strong tendency to oxidate, the surface becoming of a dull hue, and afterwards black; it loses its hardness, and a black powder is formed. It has been said by Buchner, that if the metal be perfectly pure, this does not occur; and Berzelius once kept some portions in a bottle for three years, without a stopper, and he observed no change either in the weight or colour. When it is heated in contact with the air, it burns with a blue flame, and emits fumes which are remarkable for their peculiar smell, which has been compared to that of garlic undergoing decomposition; it sublimes into the white acrid soluble mass, known to us under the name of white arsenic. This is characterised by its causticity, and by its striking poisonous power; it is very volatile. It is generally found in the shops either as a fine white powder or in solid masses, having a shining appearance; from its being now kept in so fine a pulverulent form, it no longer gives that gritty sensation which was formerly remarked by toxicologists.

It has been always described as exceedingly acrid to the taste, and as such Zacchias, Foureroy, Orfila, Thompson, Paris, and other high authorities, speak of it; but Dr. Christison has furnished us with some details on this point, in a paper he published, to be found in the twenty-eighth volume of the "Edinburgh Medical and Surgical Journal," from which it appears that it has little or no taste. In his "Treatise on Poisons" he farther states, "that he has repeatedly made the trial, and seen it made, at his request, by several scientific friends, and that after continuing the experiment as long, and extending the poison along the tongue as far back as we thought safe, we all agreed that it had hardly any taste at all; perhaps, towards the close, a very faint, sweetish taste."

In the memorable trial at Oxford of Miss Blandy, the question was put by the counsel to Dr. Addington, "Why did you believe the powder to be white arsenic?" to which the following was the first part of the answer given. "This powder has a milky whiteness, so has white arsenic. It is gritty, and almost insipid, so is white arsenic." This is of importance to remember, because you learn that a person might incautiously swallow it without being alarmed by the taste; you will likewise remember that I told you it was next to an impossibility for any one to swallow a portion of corrosive sublimate without feeling the effects produced upon the mouth and fauces; and I am the more anxious to state this, because it was not till lately that my attention was directed to the trials of Dr. Christison, on being called upon by a general practitioner to give him my assistance in a case of poisoning by arsenic, and from which I had occasion to ascertain that not the slightest taste had given the patient reason for believing that anything unusual had been swallowed. I had so completely relied upon the authorities who had spoken of the nauseous taste and astringent sensation, that, when requested to write an article for the "Encyclopædia of Practical Surgery" upon arsenic, I described it as creating a singularly astringent sensation about the mouth and fauces.

Arsenic may be stated as readily soluble in water; the different experimentalists have variously recorded the results of their trials; it appears that the solubility is much impaired by the presence of different substances in the fluid. The illustrious founder of Homœopathy, Hahnemann, whose able work on arsenic is quite sufficient to place him in the first rank of medical inquirers, found that if milk, or mucus, were present, its solution was a matter of great difficulty. By subsequent evaporation, regular tetrahedons are obtained from it; it is in this state that, from its resemblance to white sugar, it has been mistaken for it. The tests for detecting arsenic, and the history of the compounds which it forms, are of the deepest interest, but they have been so long supposed to be ranged under the toxicological department of medical jurisprudence, and, in fact, they have become, from the vast number of facts recorded, so rich in matter, that I cannot here introduce them to your notice. I must satisfy myself with the effects produced upon the human frame by arsenic, as a medicinal agent, simply stating to you the bad effects that result from it when unduly administered.

Arsenic has been, from the earliest records we have of India, employed there by the natives in the cure of various diseases. The native physicians administer it in elephantiasis, premising bleeding and purging; their plan of preparing it, is by forming it into pills, with six times its weight of black pepper, with a small quantity of water, so that each pill should contain about two-thirds of a grain of the metal, and four grains of pepper; this is ordered to be taken twice in the course of each day, and has been regarded there as a specific. It is, likewise, the common medicine which they have recourse to for the cure of syphilis, and then they employ manna as a cathartic. These pills have been introduced into

France by M. Bieil, and there are some known under the name of Asiatic pills, and others under that of the arsenical pills of Barton; these last contain the sixteenth part of a grain, a small quantity of opium made up with soap. The pills of Tanjore are now employed in the East as a cure for the bite of venomous insects, or of animals, and contain about three-quarters of a grain. It was probably introduced into European practice with the other Arabian medicines; Hildanus ascribes it to a monk of the name of Theodoric, who lived about the beginning of the eleventh century. It is stated that it was during the great prevalence of intermittent fevers in Poland, that its power as an antiperiodic was first tried. M. Desgranges has collected all that has been handed down to us on this subject.

In this country, about the year 1780, an intermittent fever invaded various parts of this island; it was of an unusual character, it continued for two years; its obstinacy eluded all attempts to subdue it, and its distinguishing characteristic was its resistance to the Peruvian bark; and great was the disappointment from a medicine which had always obtained the character of a specific. A valuable paper from the classic pen of Sir George Baker is extant on this subject; it was read at a meeting of the College of Physicians, Jan. 10, 1785. From this we learn, "that a medicine compounded of arsenic and opium, the dose of which is a very few drops in water, was taken by some of the inferior ranks of the people, and sometimes successfully, but, now and then, violent vomitings, colics, and dysentery, were the effects of it, especially when a patient, too desirous of a compendious cure, exceeded the dose limited." We likewise learn that a practitioner in the county of Dorset, dispensed this remedy amongst his patients with great success. He found that it very rarely failed to stop the fits very soon; he was not aware of its composition, but stated that he had reason to think that the medicine had some active poison in it, which injured the constitution afterwards. He saw more than one case where an ague thus cured was followed by a palsy of the lower extremities, so that, at length, he was induced to abandon the remedy.

Doubtless the unscientific form in which the arsenic was used, and the badly regulated doses, which seem to have been very little attended to, were sufficient causes for the neglect of the remedy; nor can we be surprised at the language used by the authority I have just quoted; he says,—"Arsenic is mentioned in books as a febrifuge, but it is one of those substances of which we are not, as yet, so far masters as to be able, by any act, to render it transferable from the list of poisons to our materia medica; and it cannot be deemed to be a proper remedy for an intermittent fever, while an intermittent fever is less formidable than arsenic." Dr. Fowler, of Salisbury, has, however, taught us how to obtain a most serviceable and valuable medicine from this highly deleterious substance; and the liquor potassæ arsenitis of our present Pharmacopœia owes its origin to the well-directed inquiries of that excellent physician. We are now taught to form it of arsenious acid broken into small pieces, carbonate of potash, each eighty grains, compound tincture of lavender, five fluid drachms, distilled water, a pint. The arsenious acid and carbonate of potash, are boiled with a half-pint of the water in a glass vessel until they are dissolved; add the compound tincture of lavender to the cooled liquor; lastly, add besides of distilled water as much as may be sufficient that it may accurately fill a pint measure. Mr. Phillips observes, that in making this preparation, the arsenious acid usually sold in powder, should not be employed, as it is very commonly adulterated with sulphate of lime or gypsum, which being insoluble in the soluble carbonate of potash, the operator supposes that it is difficult to prepare this medicine. This adulteration may be detected by heating the powder in a crucible,—whatever is not volatilised is an impurity.

So highly has this preparation been estimated abroad that it is to be found in almost all the foreign pharmacopœias. Indeed, during the march of the French army into the plains of Lombardy, where, from the marshy soil, a miasma had emanated, which was infecting the soldiers, the French Directory, guided by some of those great men whose scientific inquiries were encouraged by the Government, issued a decree commanding the surgeons, under pain of military punishment, to employ a preparation precisely similar. The highest encomiums have been lavished on Dr. Fowler; indeed, the individual who converts a poison into a valuable remedy, must richly deserve the approbation of the community. It has been usual to commence with about five minims of this solution twice in the course of the day, and it may, with proper precaution, be increased until more than a scruple has been taken.

I have had occasion to remark to you that its effects are much more striking in the intermittent fever occurring during the autumnal months, than during that which is prevalent in the spring; and the more intensely the miasm has acted upon the system, the more decided are its good effects, whilst cinchona, and the barks of certain trees, produce their characteristic influence during the spring, and are remarkably powerful where the disorder has not gained much on the constitution. Arsenic may, therefore, be often kept back as an ultimate resource, until cinchona has failed, which,

undoubtedly, in some of those remarkable epidemics which have occasionally occurred, has been found to be the case. Intermittent fever seems to become every year more rare in this country, even in soils where it was once known to be very prevalent; and the paroxysms so easily yield to remedial agents, that so potent a medicine as arsenic, and one to which patients, in general, have a strong objection, need not, at first, be employed. Care should always be taken, before its exhibition, that the bowels should be emptied, for they otherwise are not easily acted upon, and costiveness in some cases occurs, while in others, and that more commonly, profuse diarrhœa takes place.

In elephantiasis this remedy has been found quite as serviceable in Europe, as we have been told it has proved in India, when cases have required its administration, still there is great uncertainty as to the proper stage in which it may be given. The unfrequent occurrence of it in this country has prevented our becoming fully acquainted with this extraordinary state of the constitution; indeed, it was at one time believed that Englishmen were not subject to it, and Ainslie remarks that he had seen in India, Danes, Swedes, and Germans, thus afflicted, but no Englishmen. This, however, is now fully ascertained to be an erroneous opinion. Probably the best description, with the mode of treatment, is that which is given by M. Biett, in a clinical lecture delivered at the *Hôpital St. Louis*, at Paris, a translation of which you will find in THE LANCET for the year 1828.

In various states of lepra, and sometimes in its very worst states, arsenic will prove the most certain, and, properly given, safest remedy, both internally and externally employed. There was very much prized by the older physicians, a magnetic arsenical plaster, which was invented by Angelus Sala, to which was ascribed the power of charming away all affections of the skin, and also pestilential buboes and carbuncles.

From a very early period remarkable cures of cancerous affections were recorded by authors, from various preparations of arsenic. Amongst these, Fallopius, Bernhardt, and Roennow. Fuchsius united it with soot, and Richard Guy, with sulphur, hog's-fennel, and arrow's-foot, in order to disguise it from the patient, and it has been the principal ingredient of a great number of those quack remedies, whose bold and unprincipled inventors have obtained for themselves momentary celebrity, and ill-gotten wealth. This powerful medicine has doubtless sometimes been much misapplied in the different states of cancer; at the same time, however, medical men should not be discouraged from its not always having proved effectual, or from its having, now and then, proved dangerous. There is no doubt, that any indiscretion in its use, any want of caution may prove fatal, and notwithstanding the occasional escape of persons after the employment of fearful doses, I would impress upon your minds that you are never justified, because a solitary case, here and there, is thrust before your notice of extravagant quantities having been given, to administer, but with the remembrance of the sacredness of human life, any remedy which has the slightest uncertainty in the intensity of its action. In one of the journals I find a case where an immense quantity of arsenic was given,—three hundred drops in four days, to a young lady, fourteen years of age, suffering under chorea; arsenical pills were then given "for a change;" this was continued four more days. "The nervous irritation having been supplanted by vascular action," the drug was then discontinued; and we are told by the physician, evidently to his own great surprise, that no swelling of the face was produced, "and neither dropsy, consumption, nor rheumatism, have yet supervened." It is from an American journal that this case is quoted by some of our own periodicals.

On the other hand, cases abound which show us that the most practical, the most experienced men have found the necessity of the utmost caution. In the reports of cases at *St. George's Hospital*, in the "Medico-Chirurgical Review," is a very valuable narrative of the death of a man, sixty-three years of age, who had cancer of the tongue; the whole history presents to us a most pitiable and hopeless case. No remedy was so likely to be advantageous as arsenic; five drops of the mineral solution were taken three times daily; at the end of three days the dose was raised to seven drops; on the eighth day vomiting occurred; altogether one hundred and fifty minims had been given during that time, which was little more than a grain; the remedy was, however, discontinued, but symptoms of an alarming character came on, and the unfortunate man died on the eleventh day. As was remarked by the distinguished surgeon who superintended the dissection, the appearances after death, as well as the symptoms that had occurred, showed that the remedy, rather than the disease, had terminated existence.

Roux furnishes us with an instance of the death of a young girl, aged eighteen, who died in consequence of the application of the *pate arsenicale* to a cancerous breast. This paste contains only one part of its weight of arsenic to thirty-two of fatty matter, and was applied on a surface which did not exceed an inch and a half in diameter, and for one single night only; next day vomiting and violent colic supervened, and, after great suffering, she died in two days. Sir Astley Cooper relates an instance where a patient had a fungus in the eye, to which

the solution of arsenic was liberally applied; he complained very much of pain in the stomach, and the result was that he died of the inflammation of that organ. On examination after death, the stomach exhibited the peculiar inflammatory appearances produced by the action of arsenic. These are cases which certainly must be acknowledged to be extreme ones; but I think it right to impress upon your minds the great necessity of caution and discrimination; nor do I think if any untoward event occurred in your practice, from a very large dose, that an excuse should be pleaded on the score that in some particular case such a quantity had been fearlessly employed, and, fortunately, no bad effects had resulted.

I have already had occasion to point out to you the stages in which conium, and in which carbonate of iron are to be employed in cancer, and I have now to speak of the action of arsenic; its internal use does not seem to produce such good effects as do either of those remedies, but its external application is to be recommended when the scirrhus softens and ulcerates; when the general appearance indicates that the structure of the parts has undergone a considerable change; when conium is, for a time, suspended; and when there is almost an absolute certainty that the disease will progress onwards, until death shall relieve the sufferer. The action of the arsenic extends much farther than the part with which it is immediately placed in contact; it separates the mass from the surrounding parts, in the same manner, Justamond has observed, as a nut comes out of the shell; or, as if it had been cleanly dissected by the knife. Mr. Carmichael justly remarks, that this peculiar effect of arsenic has no analogy in its action to other escharotics, or even to its own action on other tumours, which produce superficial sloughs, and destroy the parts with which they are immediately blended, and their action is easily accounted for on the general principle of chemical affinities, but the effect of the arsenic cannot be explained by the same law; indeed, the peculiar digging out of the diseased mass, if I may be allowed the expression, is one of the great recommendations to its employment in advanced stages of cancer, if the morbid alterations are not upon too extensive a surface.

The Baron Dupuytren, in order to obviate the inconvenient effects which result from a more extensive destruction of diseased parts than might be wished, has given some formulæ by which the application of arsenic, both in the form of powder and of liquid, might more nicely be adjusted. The powder is made from four, or sometimes five or six parts of arsenious acid, with ninety-six parts of calomel, and he makes a solution, or paste, with gum, in which nearly the same proportions of these two ingredients are mixed, though sometimes increasing the quantities of arsenic; he first cleans the surface of the ulcer by poultices, and then touches the sore with a small bit of lint charged with the powder, so as to cover its surface with a layer of arsenic, provided the ulcer be not of great extent; when it is not advisable to cover more than one-third, or a half, the paste is applied much in the same manner, with the assistance of a spatula; the application, after having produced pain and inflammation, comes away in the course of eight or ten days, and should again be renewed, according as the circumstances may require, until the complete cure is the result, which often occurs after five or six, or even a smaller number of applications; sometimes the remedy seems to produce symptoms of poisoning, nausea and vomiting coming on. He then enjoins strict attention to diet, and more particularly the restriction to the exclusive use of milk, as diet. There are some individuals, however, who have ascribed cancer to the use of milk, more particularly as I lately heard from an agriculturist, who has a pretension to be called a medical man, where the cows have fed much upon different species of the ranunculus, or butter-cup. It is not very long since that a diet of water only was pronounced to be a decided cure for this deplorable disease.

Mr. Blackadder, to whose experience in the treatment of ulcers by arsenic, I shall immediately advert, states that he never saw more than one instance of the deleterious operation of arsenic, externally used, although he had so frequently tried it; he attributes his success to his having always applied very large quantities, which he believes very quickly destroy the organisation, and necessarily prevent the action of absorption; but Hailes has observed, that it is altogether innoxious when applied to an abraded surface, to sores, to malignant ulcers, even in a high state of irritation, provided that the part be not recently wounded, and that no blood issues from it, for it is by the direct application to the open vessel that it is absorbed, and that with the same rapidity and certainty as if it had been injected into the veins. The powder of Frere Come, Plunket's powder, the pommade of Hellmand, which are the compositions employed most generally on the continent, to the ulcers of the face and nose, which commit such fearful ravages, generally produce eschars, considerable pain, and tumefaction; and hence the remedies of Baron Dupuytren have superseded in France these preparations; besides which great reliance has been placed on the modifying influence of the chloride of mercury, or calomel, which the learned Professor uniformly joined to the arsenic, in his treatment of the various ulcerations produced by cancer, scrofula, a venereal taint, whether each appeared alone or in combination.

I have, in the article in the "Cyclopædia of Surgery" to which I have alluded, particularly pointed out that in hospital gangrene the solution of arsenic is found most valuable. Mr. Blackadder, during the Peninsular war, employed it at Passages with the happiest effect; and Hennen, in his "Principles of Military Surgery," gives a long description of the plan that was followed. The first step was to make the sore perfectly clean, and freed from the viscous discharge; but as this cannot be easily effected by common means, without occasioning a disagreeable oozing of blood, or a considerable degree of pain, the ablution is made from two large hospital teapots, one containing a hot solution of the subcarbonate of soda, the other a cold one, that the one or the other may be employed as the feelings of the patient for the moment dictate; the glutinous matter which adheres to the sore may be gently detached by means of small dossils of lint; sponges are to be avoided, in consequence of the expense, for the dread of contagion must prevent their being employed more than once; dry lint may be spread on the surface of the sore, as soon as it is perfectly clean, and removed, and fresh lint applied until the sore is perfectly dry. The solution of arsenite of potash, diluted with an equal part of water, is then applied through the means of pieces of lint, which are to be well soaked, and renewed every fifteen minutes or half an hour; sometimes, on the first application, it is necessary, particularly in irritable or debilitated constitutions, to administer an opiate, and to repeat it according to circumstances. The use of the solution is to be continued until an insensible dark-coloured and dry slough occupies the whole surface of the sore, and until the patient is completely relieved from the burning and lancinating pain, which is in some degree characteristic of the disease. These cases require great personal attention on the part of the surgeon, as the application of the remedy in this form cannot be entrusted to the patient or his usual attendants, and every step of the manipulation demands great precaution, more particularly if the fingers of the surgeon should be accidentally abraded.

There are many diseases in which arsenic has been employed internally in which its good effects are doubtful, though there are cases in which it has been occasionally successful, Dr. Bardsley of Manchester recommends it in some states of rheumatism. It has been often successful in periodic tic douloureux, in chorea, in epilepsy. It has failed to afford any advantage in hydrophobia, in which it was tried by Dr. Marcet; nor has it produced any beneficial influence in consumption, in which Dr. Roberts, at *St. Bartholomew's Hospital*, gave it as he did most of the metallic salts, in the hope of finding some additional means of combatting the disease. During the internal administration, or external application, of arsenic, great attention must be paid; it occasions pain in the stomach, a disordered state of the bowels, œdematous swellings in the face, the hands, and the feet, and sometimes it is a long period before the patient recovers from these effects; it induces inflammation of the eyes. Where these symptoms are neglected, and the medicine is persevered in, other bad signs very rapidly supervene, paralysis of the lower limbs, blotches on the surface of the body, which have a great tendency to become gangrenous. It is always a proper precaution to observe, not to allow much more in the hands of the patient than he is to take, for very little more than the proper quantity may excite a good deal of uneasiness. Opium is the best remedial agent should any untoward occurrence present itself, for we know no antidotes, though many have been mentioned,—lime-water and magnesia more particularly. Arsenical vapour has been pronounced by Dr. Paris as producing a deleterious influence upon animals and vegetables, but the workmen, in many marshy situations, are free from the intermittent fevers which were formerly common. Fragoso states, that persons employed where arsenious acid is fabricated are not affected, and live long. During the plague at Marseilles the vapour was employed as a fumigation until Chirac suggested that it was dangerous. The vapours have been likewise recommended as a cure for arsenic, if the metal be thrown on burning coal. Dr. Walt recommended them as a cure for icthyosis; he was himself shut into a closed chamber and exposed to the vapours arising from six grains of arsenious acid; he felt nothing during the day, but the following night, after two hours sleep, he awoke with a dreadful sense of constriction of the larynx, extreme anxiety, cephalalgia; he allowed the vapours to escape, and then again retired to rest very much fatigued; he perspired freely, and the following day had only headach. A manufacturer was engaged with his servant in boiling a mixture of nitric acid of cobalt and of arsenic; the mattrass burst with a violent explosion, the whole room was instantaneously filled with vapour, the servant leaped out of the window, but the master was knocked down and lay on the floor incapable of raising himself; the servant came back by the door, and dragged him out; he died after eight days of suffering, his body becoming prodigiously swollen; the servant had tympanitis; by the use of purgatives and baths he recovered after passing enormous quantities of fetid gas. The principal danger to be apprehended from candles in which arsenic has been mixed is upon the eyes and the mucous membranes.

ST. GEORGE'S HOSPITAL.

ABSTRACT OF

FOUR LECTURES

ON THE

GENERAL PRINCIPLES OF AUSCULTATION

BY DR. HOPE.

Percussion.—The sound on percussion is *flatter* where the lung is thinner, and where made over that portion of the chest corresponding to the seat and size of the heart, or over the edge of the liver, or the inferior part of the posterior surface of the chest, and in all parts thickly covered.

The sound on percussion is *stronger* where the walls of the chest are thin, as in emaciated patients or children.

The following precautions are necessary in percussing:—

1. Do not let the patient have his chest entirely exhausted, but moderately full; by this means the contrast between healthy and diseased sound is greater.

2. The sound is damped where there is much drapery, as in a bed or, in a small room.

3. If you percuss near a wall the sound elicited on the side nearest the wall is damped; therefore either place your patient always with the back to the wall or in the middle of the room. This is important in forming a nice diagnosis.

In ascertaining tubercular dullness of the chest, you should stand in front of the patient and percuss alternately, but in rapid succession, on each side of the chest with each hand, giving three or four strokes quickly with each on the corresponding side of the chest. Always examine both sides of the chest, because individuals present varieties in the sound on percussion. If both are dull, either both are natural or diseased. Practise on yourselves.

Always premise the general history of the case; let the physical signs follow.

The trachea divides into the primary bronchi behind the upper part of the sternum; they extend on each side near the anterior surface of the chest, about three or four inches below the clavicle. The bronchial tubes running to the lower lobe pass deep in the chest, near to the posterior surface, and corresponding about to the base of the scapula. In these situations bronchial respiration and bronchophony are natural: in others, they are signs of disease. Slight percussion elicits a sound from the superficial portions of the lung, whilst strong percussion will elicit it from the deeper parts. Thus, if a portion of lung is consolidated an inch below the surface, slight percussion will give good resonance, whilst strong percussion will elicit dullness.

Auscultation.—In the healthy condition of respiration three sounds are produced:—First. In the trachea, a superficial sighing sound, called *tracheal respiration*. Secondly. In the bronchi, a hollower, deeper seated sound—*bronchial respiration*. Thirdly. In the air-cells, a sound at once learnt on applying the ear to a child's chest, in which it is louder than in the adult, and therefore requiring no description, called *vesicular murmur*, and from its loudness in the child, *puerile respiration*. If a person runs, and you auscultate him while out of breath, owing to the engorged state of the lungs, the respiratory murmur is feeble; hence, when the lung is congested from disease it is feeble also.

Morbid respiration may be deficient from

1. Consolidation;
   Effusion.
2. Pneumo-thorax;
   Emphysema;
   Plugged bronchi.

It may be Vicarious, *i. e.* puerile.
Bronchial.
Cavernous, *i. e.* tracheal.

You may distinguish whether the respiration is deficient from the first class of causes, or the second, by percussion. In the first you have dullness; in the second increased resonance, except where the bronchi are plugged, and then it is about natural.

Vicarious or Puerile Respiration, is a valuable, although a negative, sign of disease, dependant on the portion of the lung over which it is heard doing double duty. Except in the child, where it is natural, it would lead you to look for disease in some other portions of the lung.

Bronchial Respiration is a sign of disease when heard in an unnatural or unbronchophonic situation. Although bronchial respiration exists naturally in the deeper-seated tubes, it is not transmitted to the surface, on account of the spongy texture of the lung, but when this is solidfied it is conducted and becomes a sign of disease.

Cavernous Respiration is very much the same as tracheal, if the cavern is situated near the surface; if deeper it appears more remote. It depends on the circulation of air in the interior of a cavern.

Morbid Sounds produced by Causes exterior to the Bronchi.

1. *Pleuritic Friction* is occasioned by two causes. First. Towards the end of a pleurisy, when the liquid is absorbed, the surfaces of rough lymph, rubbing on each other, give, during each inspiration and expiration the ascending and descending friction. Some say it exists in the first stage of a pleurisy, from the dryness of the serous surfaces, but it lasts only a short time, and you will not, in general, be called in until it has ceased. The ascending and descending friction-sounds are useful in a practical

point of view; do not dismiss your patient after pleurisy until this sound is gone, for if the lymph inflames it may suppurate. Secondly. The second cause is rare; it is heard where there is interlobular emphysema of the lung. When arising from the first cause, a coarse crepitation is heard which gives a sense of the lymph being very wet; it is very superficial, and it is its superficial nature which distinguishes it from affections of the bronchial tubes.

2. *Metallic Tinkling* is most like the sound produced on dropping a small pin into a glass, abstracting the click produced by their contact. Dr. H. does not think it a very valuable sign; it is rare, and difficult to appreciate; it is heard in pneumo-thorax where you have an aperture through a bronchial tube. Laennec thought the presence of a fluid necessary, but it may be produced in any cavity containing air, and depends on an impulse communicated to that air.

3. *Amphoric Respiration*, when there are a number of apertures; not very frequently heard; something like blowing into a narrow-necked bottle.

Bronchial Râles.

Dry.	Sibilant.
	Sonorous.
	Dry Mucous.
Humid.	Mucous.
	Subcrepitant.
	Crepitant.
	Gurgling.

The first class arise from a dry cause, as tumefaction of the membrane, local humours pressing on the bronchi, or viscid mucus adhering.

1. *Sibilant*—A slight whistling sound produced by constriction of the air-passages; in this the air only vibrates.

2. *Sonorous.*—Like snoring, cooing of a dove, or the bass tones of a violincello; produced by the vibration of a solid as well as the air, just as the reed of a clarionet vibrates. Some think that the bronchial tubes are flattened; but it is merely presumed.

3. *Dry Mucous Râle.*—A clicking sound from dry tough mucus adhering to the side of a bronchial tube, very common in chronic bronchitis.

The second class, or *humid râles*, depend on the bursting of air-bubbles, their size corresponding to the size of the air-tubes, according to the size and situation of which they present different varieties. By practice you can distinguish the different sounds, still, whether the disease is confined to the greater tubes, or extends to the smaller ones; this is extremely important in prognosis.

1. *Mucous Râle.*—If you have a large quantity of thin mucus in bronchi you have a very rapid succession of bubbles; their rapid succession and humid nature indicate this, and afford a good distinction between pituitous and mucous catarrh. The thicker the mucus, the slower the succession of bubbles. If there is a very small quantity of mucus present, as at the close of catarrh, or in dry catarrh, it is only produced at the commencement and termination of inspiration, and you thus judge that its quantity is small.

2. *Subcrepitant Râle* consists of a finer and coarser crepitation combined; from the presence of the latter you know that it is in the bronchial tubes.

3. *Crepitant Râle* commences in the vesicular structure, and was compared by Laennec to the deflagration of salt thrown on the fire, or to the rustling of silver-paper squeezed in the hand. It is better compared, however, to the sound produced on rubbing a little of your own hair between your fingers.

These mucous râles are grades of the same thing, depending on the size of the tubes or passages in which they are produced.

4. *Gurgling.—Gargouillement*, occasioned by a considerable quantity of liquid mucus in a tubercular cavern. If the patient expectorate it disappears, and is replaced by cavernous respiration. Dr. H. thinks it even a more valuable sign than pectoriloquy, as that may be confounded with bronchophony.

There are cases in which the whole of these râles may be heard simultaneously, as when acute bronchitis supervenes on a chronic form of that disease. It is possible to distinguish them all from each other, as the leader of an orchestra will detect a single instrument out of tune. Generally you have to distinguish them through the natural respiratory murmur, although they are sometimes so loud as to conceal it.

Sounds of the Voice.

Natural Sounds.—The voice resounds through the whole of the bronchial tubes, producing different phenomena according to their situations. Over the larynx you hear a sound transmitted quite through the stethoscope, and which seems to come into the ear; this is laryngophony. Over the great bronchial tubes you hear the same kind of thing not coming through the stethoscope; this is bronchophony. This sound is not heard in the deeper-seated bronchial tubes, as bronchial respiration is not heard there. It is louder in thin people, and in children where the chest is generally thin, and the voice shrill; a shrill voice produces the loudest bronchophony, acute tones propagating themselves more powerfully than grave ones; hence, in listening for this sound, it is well to direct the person to speak in a shrill voice. When laryngophony and bronchophony are heard in other situations they constitute

Morbid Sounds.—Laryngophony, when heard in the chest is called pectoriloquy. If you have a cavity in the lung producing a sound coming through the stethoscope to the ear, it is called *perfect pectoriloquy*. This is one of the first sounds you will begin to learn, but one of the last you will feel perfect in. *Imperfect pectoriloquy* is analogous to bronchophony; if quite out of reach of the large bronchial tubes, then it is called "imperfect," but if near the bronchial tubes, Laennec called it "doubtful pectoriloquy." If it exists on one side, and not on the other, you have greater presumption that it is pectoriloquy. These distinctions, if depended on alone, are very liable to mislead, and therefore should be taken in conjunction with other signs, as gargouillement, &c. When bronchophony is heard in any other than a natural or bronchophonic situation it indicates that the lung is solidified, and the sound thus transmitted to the surface. This solidification may arise either from solid or liquid causes.

Œgophony consists of bronchophony modified by the sound being transmitted through a layer of fluid. The bronchophony is first transmitted, but afterwards modified by the vibrations of that fluid. The sound is better heard with an acute voice; here, therefore, again direct the patient to speak in as acute a tone as possible. The part where œgophony is most distinctly heard is where the layer of fluid is thin, because then the bronchophony has greater power in setting it in vibration; if the pleura is full it is not heard at all; if the fluid only extends to the middle of the chest, it is heard at that point. The variations in the position at which œgophony is heard is a great assistance in judging of the progress of a case.

Extensive Bronchophony is heard especially in pleuro-peripneumony, because here the fluid cannot compress the bronchi; in this case œgophony may be heard anywhere.

CRITICAL COMMENTS
ON
Mr. JEAFFRESON's CASES OF LITHOTRITY.

By W. Hempson Denham, *M.R.C.S., Wickham Market.*

The practical, which is the most important because it is the most useful, part of the science of medicine, and the *ultimum thule* of the medical investigator, is as much, if not more, advanced by the detail of unsuccessfully treated cases of disease, as by the relation of those more favourably terminating cases in which the *vis naturæ*, though deprived of the credit, has often done a great deal, and the doctor, it may be, but very little. The relation of fatally-terminating cases may teach the reflecting practitioner to consider whether a modification of the treatment pursued might not have been beneficially made, or perhaps entirely changed, with still greater benefit. Mr. Jeaffreson is entitled to credit for the publication of his unsuccessful cases of lithotrity, and having published them they have become legitimate subjects for general criticism.

The first case, that of Mr. Smith, I consider to have been one in which *lithotrity* ought not to have been attempted, and that *lithotomy* would have afforded a much better chance of curing the patient. Let the reader note what follows, and to use legal phraseology, "a true verdict give, according to the evidence."

December, 1833. Mr. Smith had had symptoms of stone for several years, and "the most irritable urethra I ever witnessed." "On the 24th, Mr. King detected and crushed a calculus; but from the morbidly-sensible urethra, and enlarged prostate, there was more and louder expression of suffering than usual, which was repeated at every subsequent sitting." There were nine sittings.

Now, here was an highly-excited, or, as Mr. Jeaffreson expresses it, "a most irritable," mucous surface; yet he considered it to be right to still further irritate that membrane, by using lithotritic instruments for a protracted period, on nine different occasions, to crush what was, at first, *one* stone, into nobody can tell how many fragments, each of which must, of necessity, have possessed at least two or three acuminated edges, which, as a matter of course, during the movements of the body, or the contractions of the bladder, were acting on and irritating the already "most irritable" lining membrane. This was going on from the above date till the 11th November, (1834?) when Mr. Costello, who was then in the neighbourhood, was requested to see the patient, and Mr. C. crushed several portions of calculus. Shortly after this the patient "went to town, and was under the care of Mr. Costello for two months, and returned relieved of his urgent symptoms, and with an assurance from Mr. Costello that his bladder was free from calculus." At this period I consider there was an important omission in the treatment of the case. Mr. Costello had relieved the patient of his "urgent symptoms," and he returned into the country, and remained in "tolerable comfort" for seven or eight months, at the end of which time "his sufferings were as severe as ever." Now, a moment's reflection will let any one know, that merely abstracting a calculus from the bladder, whether by lithotrity, or, *cæteris paribus*, by the equally safe and more expeditious operation of lithotomy, although it relieves the patient of his "urgent symptoms," does not *necessarily* cure

him of his disease, for the disposition to lithic formation which pre-existed is still going on; the patient, therefore, requires, at this period, to be submitted to a rigid course of treatment, with a view to correct his peculiar diathesis, and to prevent the formation of stone again. Had Mr. Smith, the patient in this case, been submitted to such treatment when he returned to the country, it becomes a question, not easily to be negatived, whether, instead of remaining in "tolerable comfort" for seven or eight months after the last operation, he might not have gone on so for a much longer,—an indefinite period; at least, taking all the circumstances into consideration, the post-mortem appearances tend much to prove that such would have been the case. *Had lithotomy been performed in December* 1833, *Smith, in all probability, would have been living now.*

Case 2, that of Mr. Mills, is a remarkable illustration of the difficulty that is occasionally experienced in detecting stone; for although, on one occasion, Mr. Jeaffreson "seized and crushed a calculus measuring about *eight lines* in diameter, and another portion somewhat *less*;" and again, "on the 8th, 11th, 14th, and 17th, continued to crush several portions, measuring from *three* to *five lines*," still an abominably provoking stone, "measuring nearly *four inches in diameter*, contrived," on all the above occasions, to elude his search, and to shove its minute, unoffending little neighbours into the fangs of the instrument.

This was truly a most unfortunate case. The patient had been very nearly eight months under treatment, and had submitted to "sixty sittings," at the last of which a fragment was fixed in the membranous part of the urethra, which was ruptured by the operator in extracting the fragment, causing, as might have been expected, percolation of urine. This occurred on the 21st of September, and on the 22nd "another portion of calculus descended to the point of the urethra, which had been so much irritated the day before." Certainly such an occurrence ought not to have been permitted to happen, but a catheter should have been introduced and kept in the bladder, and the parts rested till the urethra was healed. All, or as many as possible of the fragments, should then have been crushed, a catheter reintroduced, and the detritus evacuated through the catheter: a syphon, perhaps, might have been used with advantage. In this case, again, if lithotomy had been performed in Feb. 1836, the chances are that the patient would still have been living.

In relating a case, the narrator should employ as clear and perspicuous language as can possibly be selected; but Mr. Jeaffreson has, in some instances, made use of very dubious, not to say contradictory, expressions, which detract materially from the utility of his descriptions. The following, amongst others, is faulty. A large fragment, he says, had become fixed in the membranous portion of the urethra, and having grasped it with the forceps he wished to disengage the instrument, but the forceps was so embedded in the substance of the stone that he could not disengage it. "Embedded" in the "substance" of a "fragment" that had found its way into the "membranous portion of the urethra!"

The last case (Mr. Fisher's) differs from the preceding, inasmuch as all the calculi had been "crushed," and passed *per urethram*, but the patient, notwithstanding, suffered from *chronic cystitis*, and died in consequence. Why, the symptoms which followed the "crushing" should have been attributed to "irritation of the prostate," I do not perceive; they were evidently those of the disease I have mentioned, and the post-mortem appearances showed its usual results.

The "observations" with which Mr. Jeaffreson concludes his paper do not strike me as being of that strictly scientific character which might be expected from the "first provincial lithotritist." Surely he does not pretend to anything original in "the opinion, that it is only the mucous coat of the bladder which has the power of resisting the irritating and disorganising properties of the urine," although the idea that "the other tissues gradually imbibe this fluid," I believe to be peculiarly his own.

Mr. Jeaffreson concludes by saying, that in any future case, accompanied by such deposit in the urine as to lead him to apprehend ulceration of the lining membrane of the bladder, he would advise his patient to submit to lithotomy; but I would say, that if under such circumstances his patient did submit to the operation, he would, most probably, make a speedy exit from this world of woe.

MIDWIFERY.

DOUBTFUL CASE — INFANT BORN WITHOUT LEGS.

Dr. Smith begs to forward the enclosed case for publication in The Lancet.

3, Rowcroft, Stroud, Gloucestershire,
December 2nd, 1837.

I was lately requested to visit Mrs. Llwelling. I had once or twice attended her in her confinements before. Her husband, who called on me, represented that she had been, and continued to be, very much flooded, and was exceedingly depressed in spirits, and that, more especially from not having, in either of her former confinements, ever experienced anything of this kind.

On my going to her house I found her sitting in her bedroom. She complained of no pain or uneasiness, but that on moving she had such a considerable discharge from the uterus as to produce great faintness. Her pulse, from the exhaustion, was so low and feeble that I could not count it. She informed me that this cause of exhaustion had been going on for nearly a fortnight. I ordered that she should keep her bed, and that cloths, dipped in cold water, should be kept constantly applied to the vulva. I likewise prescribed an infusion of roses, with acid and sulphate of magnesia, her bowels being somewhat confined. I visited her again on the following day. She then appeared to be much better; the discharge had ceased, the bowels had been opened, the pulse had become augmented, and her spirits considerably recovered. I requested that her medicine should be continued, and that if any return of hæmorrhage made its appearance to apply immediately the cold application, apprising me of the circumstance. She was now about seven months advanced. I did not hear from her again for nearly a month, at which time my assistance was requested. I then found she had had repeated appearances, but not to such an extent as to induce her to send for me. She had, however, at this time again suffered so considerably that I could not count her pulse, because it had become so low, and her countenance was exceedingly anxious. After I had for some time applied the remedies, as before described, and finding them inefficient, I resolved to make a careful examination *per vaginam*. This examination proved the suspicions which I had formed of her case to be correct. The os tincæ was dilated to about the size of a crown-piece, and seemed to be of about the thickness of a doubled piece of parchment, over which was lying the placenta. The consequence of my examination was a considerable increase of hæmorrhage, which occasioned faintness. I now determined to deliver my patient, if possible, as the most likely course to be adopted to save her life, and now came my difficulties. I introduced my hand for the purpose of turning, and under the hope of quickly grasping the child's feet to bring them down; but to my great surprise and embarrassment I could not discover the feet. The hands and all the other parts of the child's body I readily felt, but could not reach the feet. Again and again I endeavoured ineffectually to find the feet. The patient was now completely exhausted and faint. The nurse who stood by me entreated that I would relinquish my efforts, as she was certain the woman was dead. This somewhat added to my harrassing situation, as I myself was fully impressed with the idea, that in all probability my patient must sink before I could complete the delivery. I now resolved, however, at all risks, as my only hope, to pass my hand down the child's thighs, and lay hold as near to the knee as I could, without attempting to go below it, as I had done repeatedly before, each time losing my hold; I seized the thighs, kept a firm hold of them, and brought the child away. The placenta came along with the child, which was dead. The mother, though she continued extremely weak for some time, gradually recovered, and is now living. Before she became quite exhausted she took a considerable quantity of brandy in a little gruel. I likewise gave her the tincture of the ergot of rye. Upon examining the child, I found that it had no extension of the lower extremities below the knees, and what is certainly very extraordinary, that there was as regular a cicatrisation across the stumps as if the limbs had been amputated, and the stumps subsequently neatly healed. I need say no more on the perplexities of this case, which every practitioner in midwifery will readily appreciate; but in my opinion the case forcibly points out to the young accoucheur, that where he is certain of the line of conduct which he ought to pursue, he should never relinquish his efforts until he has succeeded in his object, by which, as in this case, life may be preserved.

[This was simply a case of spontaneous amputation of the legs of the fœtus, a phenomenon which has been fully described by Dr. Montgomery.—Ed. L.]

DISPUTED PROPRIETY
OF
PUNCTURING THE BLADDER
IN A CASE OF RETENTION OF URINE

To the Editor of The Lancet.

Sir:—To you, and to you only, are the profession and the public indebted for the reforms effected in the hospital practice of the present day; for, by the exposure of the "hole and corner" doings which are so prevalent within them, the medical staffs have been taught to perceive the responsibility attached to their offices, and to feel that respect to public opinion, which, until your praiseworthy efforts were exerted, they set at defiance. May I beg of you to insert the following case in the pages of your invaluable Journal:—

Martha Williams, æt. 35, residing at Morriston, near Swansea, came under my care, as surgeon to the copper works in which her husband labours; she is the subject of a tumour (or, rather, of tumours) which occupies the abdomen, as well as the uterus, and which extends into the vagina, and occasionally protrudes at the os ex-

ternum. The patient seems to date the commencement of it to an abundant hæmorrhage from those parts, about eighteen months ago, and ten months after the birth of her last child, since which period the tumour has been progressively increasing. Some months ago violent uterine action came on, propelling the tumour beyond the external orifice, and occasioning a retention of urine, for which Mr. Bird was consulted, who was obliged for some weeks to make daily use of the catheter. Her general health at the same period was considerably disturbed, but under the treatment of that gentleman she so far recovered as to be enabled to resume her ordinary occupations, and she has since twice walked to Swansea, a distance of three miles.

I was called to her on Thursday, the 25th of October last, when I fonnd the uterus again in action, the tumour protruding externally, and the urine retained *since the previous Monday*. I endeavored to pass the catheter, but failed in doing so, owing to the displacement of the bladder, which was considerably distended, and reaching to the umbilicus, and, being apprehensive that its rupture would take place every moment, I inserted the trocar midway between the umbilicus and pubis, and drew off above *two quarts* of urine. Mr. Lawrence, in his lectures, reported in your valuable Journal, sanctioned me as to the spot for the operation, and I am happy to add this instance of the operation being attended with the most favourable result, for the incision has healed without the slightest untoward symptom having occurred.

On the following morning, notwithstanding the woman had passed a comfortable night, I thought it prudent to send for Mr. Bird, who had attended her in her previous illness, but he was not at home. The husband of the poor woman had, in the mean time, requested one of the physicians to the *Swansea Infirmary* to attend. He accordingly made his appearance, accompanied by a Mr. Hancorne, and spoke in strong terms of disapprobation, in the patient's hearing, of my having tapped the bladder. He made several attempts, for about an hour, to introduce a catheter, which he at last said was effected, but added that there was "*no water in the bladder*, of which he would take his oath,"—that the poor woman could live but for a short time, and that her only chance was the leaving of a catheter in the bladder, which, however, he did not do, nor *did he direct any medicines to be given*. On the following morning (Saturday), at between 10 and 11 o'clock, he again arrived, accompanied by his surgical colleague at the *Swansea Infirmary*, and passed, successively, two instruments, both of which he said had entered the bladder; that he would forfeit his existence if this were not the case, but that there was no urine there. He asserted that *infiltration had taken place into the abdominal cavity*, for which he prescribed the application of eighteen leeches, fomentations, and the exhibition of two drops of croton oil, which he insisted upon my administering in his presence, and again repeated the poor woman could survive but a short time; and he left a flexible catheter in the bladder (?) which he confined to its situation with tape. I then informed him that Mr. Bird imagined a *false passage* to exist, from not being able to pass an instrument; but this experienced physician was surprised at the supposition, for "he had found no difficulty in passing one." His surgical colleague corroborated the latter statement, by passing a catheter, which he "felt confident was in the bladder, for he *had traced the convexity of the instrument into that viscus*, but there was no urine." About an hour afterwards Mr. Bird arrived, and, after one failure, passed a large male catheter, when between two and three pints of urine were measured off, and the instrument was confined in its situation with tape. From this period the health of the poor woman has been gradually restored to what it was previous to her late attack.

From the foregoing statement it is evident:

1st. That the puncture of the bladder was justified by the tense state of that viscus, the quantity of urine withdrawn, the period which elapsed since its passage *e naturalibus*, and the *inability* of myself and the infirmary officers to pass an instrument into the *bladder*.

2nd. That the infirmary physician did *not* pass a catheter into the bladder, on either of his visits, and that if he had done so, as he stated on his first visit, no medicines nor any other means were resorted to, *to secure the secretion* of urine.

3rd. That he also was in error in supposing that infiltration had taken place, and, consequently, his prescriptions, if carried into effect, would have produced unnecessary torture.

4th. That his surgical colleague was equally ignorant of the real state of the case, and that he must, indeed, have had "long fingers" to have traced the instrument into the bladder so greatly removed from its ordinary situation.

I will add no more, Mr. Editor, but leave the case to the judgment of the profession, who will decide impartially on its merits and demerits.

DAVID OLIVER, Surgeon.

Swansea, Nov. 16th, 1837.

ON THE

PHYSICAL PHENOMENA OF LIFE.

By M. MAGENDIE,

PRESIDENT OF THE INSTITUTE OF FRANCE.

VITAL HYDRAULICS.

The body of every animal is the seat of an internal movement, which results from the action of physical causes upon the fluids contained in the organised parts of the animal. Thus, if we select any of the mammalia, as an example, we find an hydraulic apparatus, arranged with such admirable skill and design, that the most scientific mechanic could scarcely produce a clumsy imitation of it. The term "circulation" has been appropriated to the course of the fluid which this machine is destined to put in motion, for the purpose of distributing to each organ the materials necessary for its growth and support. The study of this important phenomenon is well worthy the attention of physiologists, and it will be presently seen what various results emanate from the most simple actions, which are themselves produced by a multitude of different agents; yet how erroneous or imperfect are the ideas generally entertained on the action of the various compartments which enter into the composition of this hydraulic machine. The illustrious Harvey, no doubt, threw an immense light on the subject, by demonstrating the passage of the blood, through the lungs, from the right to the left side of the heart, and its subsequent return to the right cavities of that organ, after having traversed the whole body; but several points connected with the mechanism of the circulation escaped his notice. We advance but a small way by having determined the apparent results produced in the mass, by any mechanical apparatus; we must descend to the details of its structure and study the play and purpose of each particular piece in the machine. How few physiologists have pursued this method.

The history of the circulation embraces the study of a number of questions which require for their explanation a very considerable knowledge of the physical sciences. But, before we attack the more complicated facts, we should endeavour to make ourselves master of those which are simple; this is the only method of examining and embracing the whole subject.

Take any living animal, and make a punctured wound into any part of its body, a small quantity of fluid immediately escapes; the liquid continues to flow for a certain time, then its course becomes more slow, and at length it ceases. Make a large incision, and the fluid escapes in greater quantity; the force of the current is considerable, and it takes a much longer time to diminish, not ceasing altogether until the fluid coagulates, and closes up the opening of the wound. What is daily seen with regard to the external surface of the body, may be equally observed in its interior; hence, then, a first fact which is well established, viz., all the tissues of the living subject are constantly traversed by a current of fluid.

Open the dura mater of an animal, between the occipital bone and atlas, and then incise the little transparent pouch which presents itself to view; a limpid fluid immediately escapes, and is projected to some distance. The wound thus made soon heals up; the disturbance which was occasioned by the evacuation of the cerebro-spinal fluid is calmed, and the order of the economy restored. Repeat the experiment after the lapse of some time; incise the cicatrix, and a fluid exactly similar to that seen during the first experiment flows and escapes in nearly equal quantity. How, then, does it happen that after having drawn off a serous fluid, you afterwards discover a new deposit of it? We must admit that it has been carried to, or placed in, that particular spot by some special mechanism.

Is a more striking example required? Let the eye be emptied by a puncture; in twenty-four hours afterwards the eyeball is again filled, and distended by a new fluid. This fluid is necessarily derived from some source or other; it is not formed all at once; it has been transported by some particular agency; but what is this agency, or from what source is the fluid derived? these questions will be examined by and by. Daily experience, moreover, demonstrates an internal movement of fluid in our economy. What is "thirst" except an instinct which warns us to replace the liquids that are constantly escaping from the body.

This perpetual renewal of fluid is a condition necessary for the support of life. How long can an animal live, if completely deprived of drink? A dog, submitted to absolute abstinence, lived twenty-three days; we tried to support other dogs exclusively with solid food, but they all died. Hence the introduction of new fluid is necessary to the existence of a living body. But by what mechanism is the fluid put into motion? Is it by the law of gravity, or of capillarity? Are our organs capable of imbibing fluids, like a sponge? Yes, in many instances. Several medicinal substances are introduced into the economy by means of the porosity of our membranes, a property which likewise explains the phenomena of pulmonary transpiration, absorption, and exhalation. But is there no other force by which the fluids of the body are circulated? Yes; this is performed by an admirable assemblage of organs. We commonly designate by the names "vessels," "arteries," "veins,"

"capillaries," &c., a number of membranous "tubes," destined to carry the blood to every point of the body. The word "tubes" seems preferable to the anatomical terms, for it has the advantage of attaching our ideas to the laws of physics,—the only ones which can throw light on the questions we are about to examine.

Taking a general view of the circulatory apparatus, we find a *central hydraulic machine* (the heart), which serves as a reservoir and pump for the fluid (blood) destined to move through every point of the body; *discharging tubes* (arteries) which carry the fluid from the central machine; and *carrying tubes* (veins) destined to re-collect the same fluid when deprived of some of its qualities, and mixed with certain foreign materials. These tubes are not of equal diameter throughout; they gradually decrease in calibre as they recede from the central organ, and present a continued succession of cylinders, the most minute of which are finer than hairs. The latter constitute an intermediate class of tubes called capillaries. But a fluid contained in a machine cannot be moved without the action of some mechanical cause.

In some cases, gravity is the power employed; thus, by means of reservoirs situate in elevated stations, water is carried to a great distance. In other cases, hydraulic wheels, moved by falling water, are employed; in a great many instances steam is forced against a piston. Everybody is acquainted with the manner in which mechanics have availed themselves of the force of the winds to favour the ascent and course of fluids; but we find nothing analogous to all this in the animal body. Gravitation may, indeed, effect something, but the essential force by which the human hydraulic machine is put in motion is muscular contraction; hence, in the study of vital hydraulics, we must consider two points:—

1st. The moving force, a *vital agent*, whose mechanism will probably always remain a mystery; and,

2nd. The play of a central machine, and of tubes traversed by currents of fluid, which is subject to the ordinary laws of hydrodynamics. The analogy between the organic and common mechanical pumps, is, indeed, very great. In both machines the direction of the currents of fluid is regulated by similar contrivances. The orifices of an hydraulic tube are closed, or left open, according to circumstances, by the disposition of its *soupapes;* now, whether they be living membranes, or simple plates of metal or copper, the action of these *soupapes* is essentially the same; the passage of the fluid is free, or interrupted, according as they may be open or shut, and it is in vain that we look for anything in their mode of acting except a mechanical phenomenon.

In the human heart we find the orifices of all the great tubes furnished with membranous folds, and which, in the language of the schools, are denominated "tricuspid, mitral valves," &c. It would be desirable to substitute the term *soupapes* for these expressions, because it leads the mind at once to physics, from which science it has but too great a tendency to wander.

The two principal tubes which communicate with the central pump are furnished with valves, but the latter, instead of being composed of a single plate, are formed of three isolated plates. Is this a superfluity? or was not the constructor of our hydraulic machine most profoundly versed in mechanical knowledge? Assuredly the admirable unity of design which presides over the action of this machine, and the prodigious results, obtained by the most simple means, excel all that the most scientific natural philosopher could have imagined. The object desired could not have been obtained by a single valve Now, let us suppose the orifices of the tubes furnished with only one, this would certainly oppose the reflux of fluid as long as the tube conserved its habitual diameter; but the tube is elastic, it is capable of considerable dilatation, and, in this latter case, a single *soupape* would accomplish its function in a very imperfect manner. On the contrary, by the ingenious mechanism of three valves (*soupapes*), which touch one another at the centre, the course of the fluid through the tube is regulated at every degree of its dilatation. We must not, however, push the analogy between living and dead machines too far. The former exhibit certain conditions of the deepest interest to the physiologist. Thus, a common pump will act equally well, no matter what may be the nature of the fluid which passes through it; but the contrary is observed with respect to the animal hydraulic machine. This depends, partly, on the nature of the tubes, and, partly, on the specific nature of the contained fluid, which harmonises perfectly with the physical properties of the living tubes, and without which the machine itself could not continue its functions. It has been already mentioned, that the human machine is constantly traversed in every direction by currents of fluid; but what is the nature of this liquid? Its characters are excessively complex, and even the most skilful chemists find a difficulty in determining its composition.

This fluid is remarkable for its viscidity, a property which cannot be increased or diminished without producing serious consequences.

The tendency of the blood to coagulate is also another property which exercises an immense influence in the animal economy. Thus, let blood be drawn from the arm, and the fluid be collected in any vesssel; the blood at first appears as a homogeneous

fluid, but it soon separates into two portions, the one solid, formed of fibrine and colouring matter, the other liquid, and composed of serum. But it may be asked, why does the blood continue fluid in the vessels of a living animal? Why does not any accidental retardation of its course produce a tendency to solidification? This, undoubtedly, depends on some agency of physical causes with which we are as yet unacquainted. When first viewed the blood seems to form a uniform mass, but if submitted to the microscope it presents myriads of small bodies of a lenticular shape (and not globular, as was formerly thought), floating in the midst of limpid serum. These little lenticular bodies are constantly rolling, one upon the other, and traverse tubes more delicate than the finest hairs, with the greatest facility. There is no product of science to be compared with these wonderful mysteries of our organisation, the whole of which is governed by a harmony of design, and an *ensemble* of actions, whose results alone we can attempt to analyse.

GLANDERS,

PRODUCED IN A MARE,

BY THE INOCULATION

OF MATTER TAKEN FROM THE

BULLÆ AND PUSTULES OF THE MAN—PROST.*

TRANSLATED FROM THE FRENCH OF M. RAYER,

By T. H. BURGESS, *M.D.*

On the evening of Prost's death (Feb. 12, 1837), M. Vigla gathered upon watch-glasses, a certain quantity of the sanious matter issuing from the gangrenous bullæ situated beneath the ear, and some pus from a pustule on the forearm, and also from an abscess on the back and shoulder. M. Leblanc inoculated, in my presence, and in the following manner, a foundered mare, (which, although thus rendered unfit for service, still did not present any other symptom of disease) with the different portions of matter.

1st. At the right nostril, he inoculated the pustular matter by three punctures, of which two were within the nostril and one external; the two first punctures gave rise to a weeping of blood, but the other produced scarcely any.

2nd. Upon the conjunctiva of the right eye he applied a small quantity of the matter taken from the pustule.

3rd. At the internal and superior part of the right buttock he inoculated the pus taken from the abscess by three punctures.

4th. At the internal and anterior surface of the [right axilla he inoculated with pus taken from the abscess by three distinct punctures.

The left side of the animal was inoculated in a similar manner.

1st. The left nostril was inoculated with the matter of the gangrenous bullæ by three punctures, of which one was within the nostril. The puncture gave rise, like those on the opposite side, to a slight weeping of blood.

2nd. To the left eye he applied the humour of the gangrenous bullæ.

3rd. The internal and anterior surface of the axilla of the left side was inoculated with the matter of the gangrenous bullæ by three distinct punctures.

4th. The internal surface and superior part of the left buttock was inoculated with pus by three punctures. In fine, the entrance of the nares and vulva were highly impregnated with pus.

I have observed (adds M. Rayer) the effect of these different inoculations with M. Leblanc, who kept a diary of the proceedings.

The following are my observations:—

On the 13th and 14th, no appreciable change could be observed in the state of the parts inoculated. On the evening of the 15th, at 7 o'clock, slight circular and circumscribed efflorescence and swelling around the punctures on the right buttock; at the centre of the swelling a depression was observed, corresponding to each puncture; painful tumefaction in the region of the left buttock where the punctures had been made, and the matter of the bullæ inoculated. This unœdematous and hard swelling, extended a little below the punctures but not above. The circumference of the punctures of the wings of the left nostril were a little tumefied; there oozed a small quantity of serous liquid from the internal wing. There was also effused a little serosity from the punctures of the internal wing of the right nostril; but the circumference of the punctures was not at all swollen. The

* Prost, whose case has been already noticed in an English journal, in the form of extracts, taken from M. Velpeau's "Clinique," although in so very brief a manner as to warrant me in giving the full details of this interesting case as published in M. Rayer's work. The following is an outline of Prost's case, as given by M. Rayer:—A groom sleeping in a stable, and near an animal affected with acute farcy glanders; typhoid symptoms; subcutaneous abscess; pustular and gangrenous eruption upon the skin; pustular eruption in the nasal fossæ and larynx; small abscess in the lungs; gangrenous eschars on the glans, terminating in death; inoculation of a horse with the matter taken from the pustule and bullæ of Prost, followed by the development of glanders, as may be seen by the subjoined report of the proceedings.

pulse was normal; 48 pulsations in one minute.

On the 16th, at seven in the morning, no change was observed. The evening of that day the symptoms of inoculation were a little more marked.

17th. At eight o'clock in the morning the tumefaction of the punctures has increased; the tumours are more hot, more hard, and more painful. Upon the lateral part of the superior lip, near the commissure, and almost on the margin of the lip, were observed two elevated bands, about an inch in thickness; that of the left side is a little more elevated and elongated than that of the right; it is also more painful; the surfaces of both are slightly irregular. The eyelids of the left eye are greatly swollen; the conjunctiva, which was very pale before the inoculation (the horse being blind in consequence of atrophy of the eye-balls), is a little coloured and red. The air expired by the animal has a disagreeable odour; the orifice of the nostrils is smeared with a serous liquid. At five o'clock that evening the state of the horse is nearly the same. The swelling in the left buttock is extended above the punctures; it presents the appearance of a flattened band; it is also prolonged inferiorly. The pulse still normal, being 48 pulsations in a minute. The animal eats well; temperature of skin natural.

The 18th, at seven in the morning: the nodulated tumours of the right buttock are united by a band very hot and very painful, which extends inferiorly beyond the puncture, passing about two inches beneath it. There is considerable bleareyedness in the external canthus of the left eye. The band on the left commissure of the superior lip is prolonged upwards, and is also extended backwards; there flows from the nares a serous fluid, more coloured and more abundant than that which was observed in the evening. In general the circumference of those punctures that were impregnated with the *matter taken from the bullæ* are much more tumefied than those of the other punctures. The evening: no change worthy of any notice.

On the 19th, seven in the morning, nearly the same state as on the evening previous, only the circumferences of the punctures in the nostrils appear more tumefied, especially on the left side. The respiration is a little more difficult. At 5 in the evening the nasal *bruit* is more marked; all the tumefied parts are very painful. The animal eats little, and that little with difficulty.

The 20th, morning: exasperation of all the symptoms; the band on the superior lip is extended to the left as far as the ganglia, which are a little tumefied and painful. All the tumours are circumscribed, and terminate abruptly after the manner of tumours, called *farcy*. The animal, with much difficulty, is enabled to open the lips to take her food. In the evening, nearly the same appearances.

The 21st: the symptoms of infection are still more marked, and the local pain is more particularly increased in those parts where the inoculation was made with the matter of the *gangrenous bullæ*. The disease still proceeded steadily in its course for some days, and on the twenty-first day from the period of inoculation, the animal was killed, after having presented the symptoms of *pustular glanders* and *acute farcy*.

The following day I laid before the Academy a series of specimens extracted from the body of this animal, in the presence of my honourable colleagues, of M. Dupuy, of of M.M. Leblanc, Bouley, Vigla, and Desir, all of whom, excepting M. Bouley, had been present at the inoculation of the animal.

The excised portions presented the following appearances:—

1st. The pustular eruption of acute glanders in the nasal fossa; the eruption was less strongly marked than in the case of spontaneous acute pustular glanders that I have observed, but the nature of which has been recognised by able veterinary surgeons present at the autopsy, by my colleagues (M.M. Andral and Velpeau) of the *Hopital de la Charité*, and many other physicians present.

2nd. Large ulcerations were observable at the entrance of the nostrils, in the inoculated spots, and other ulcerations of less magnitude upon points of the septum of the nasal fossa.

3rd. Upon the eyelids were seen ulcerations consecutive of the pustules which were developed in the substance of the skin.

4th. Small hepatised spots in the lungs.

5th and last. Bands and tumours containing pus, and formed in the submaxillary and glosso-pharyngeal vessels and lymphatic ganglia, affected with a specific and glandered inflammation, the nature of which was happily disclosed by the peculiar and characteristic eruption of the nasal fossæ.

I conclude thus. Prost slept in a stable occupied by a glandered horse. Some days after the death of the animal, Prost had been affected with a mortal disease, chiefly characterised by a pustular eruption on the skin, in the nasal fossa and larynx, ecchymoses, and gangrenous eschars below the ears, on the glans, on the feet, &c. &c.; by a small abscess in the lungs; by large collections of purulent matter beneath the skin, and, as it were, infiltrated into the substances of the muscles; and, in short, by those symptoms that are generally denominated typhoid.

* * * * * *

I add, in fine, that a horse whose nostrils were perfectly sound, being inoculated with the matter of the bullæ of Prost, and kept in M. Leblanc's stable, had been infected with glanders. In presence of such facts

and such exceptions, I conclude with the entire conviction that Prost had had the glanders.

Glanders in the Human Subject.

M. Rayer has published, within the last few months, an interesting and valuable memoir upon the subject under consideration.* In this work the learned writer devotes the first chapter to the history of the disease, from its first discovery in man, down to the present period. He passes in review the various English, French, German, and Italian writers, who have treated of this important, though novel disease.

Dr. Copland, the able writer of the "Dictionary of Medicine," who has treated, with a master-hand, almost all those diseases which have as yet come within the limits of his work, is poor in his article on this subject. Dr. Copland dates the history of this disease from an article published in "Rust's Journal," in 1821, the particulars of which he laid before the *Medico-Chirurgical Society* shortly after. M. Rayer goes further back, and dates its commencement from a paper published by M. Waldinger, Professor of Veterinary Medicine at Vienna, in 1810, "who states that the greatest precaution is necessary in dissecting horses who died from glanders, or farcy, as the severest injury, and even death, often arise from inoculation."

Dr. Lorin published some observations on this disease in 1811, in which he mentions that a veterinary surgeon had his fingers affected with inflammation, in consequence of operating on a farcied horse. Dr. L., after employing several remedies in vain, resolved on extirpating the little tumours, which he did, and filled the wounds with pledgets of lint, imbibed with turpentine, which cured the patient in fifteen days. Sidow, a veterinary surgeon, published a paper in 1817, in which he stated that glanders was transmissible from the horse to man, causing the worst kind of ulcers. In 1821 Professors Nauman and Holbach, of Berlin, being interrogated as to this point, denied the contagion of glanders.

The first positive observation (adds M. Rayer), regarding this disease, was published by Schilling, veterinary surgeon at Berlin, in 1821, under the title of "Gangrenous Erysipelas, arising most probably from Animal Poison." This is the case, I presume, which Dr. Copland alludes to, and from whence he dates the origin of the disease. Professor Alexander, of Utrecht, also published a paper, in which are well described the various symptoms of "*acute farcy glanders.*" More recently (continues M. Rayer), Dr. Elliotson, of London, and Professor Wolf, of Berlin, have ably treated of this disease. M. Rayer cites a number of other writers upon this subject, amongst whom I may mention the name of Weith, 1822; Coleman and Travers, 1826; Prinze, Bayle, Brera, Kerans, Tarozzi, and Vogeli; some of whom (adds M. Rayer), have confounded this disease with "*Gangrene,*" "*Putrid fever.*" "*Typhus carbonneux,*" "and "*dissecting-wound inflammation.*"

M. Rayer sums up all the information that he has gleaned from the writings of the above-named authors, which, together with his own experience in this disease, enables him to come to the following conclusions:—1st. That man is liable to the infection of glanders, a disease which has been, until lately, supposed to be peculiar to the *horse*, the ass, and mule. 2nd. That farcy, which appears to be only a modification of glanders, may co-exist with this disease in man, the identity of which has been proved by inoculating the virus of the two diseases, as with that of farcy you may produce glanders, and *vice versa*. 3rd. That inoculation is not absolutely necessary for the production of glanders, or farcy, as sometimes the simple cohabitation with glandered animals seems to produce this disease effectually, from which we are led to infer that it is contagious. 4th. That glanders, in its acute form, from all that we can infer, appears to be an incurable disease; and up to the present all therapeutic means have failed against it.

M. Rayer's first case (the particulars of which are given in a full and distinct manner), is that of a groom named Prost, who slept in a stable where existed a glandered horse. The man became affected with all the symptoms of glanders. He was admitted to the *Hôpital de la Charité*, in February last, and died from the effects of this disease, after the lapse of a few days. This case occurred during my attendance on the above-named hospital; and I read with peculiar interest, in M. Rayer's memoir, his graphic description of the rise and fall of this intractable disease, as it occurred in Prost. Since that time I have seen two cases of well-marked glanders in the human subject, one of which is now at *St. Thomas's Hospital*, under the care of Mr. Tyrrell, who purposed inoculating some of the inferior animals with the glandered matter; the particulars of which this distinguished surgeon will, I have no doubt, lay before the profession in due time.

Glanders in the human subject is not, in my estimation, a disease of such rarity as we are led to suppose, from the scanty history of it upon record; for it would appear that this disease, or rather the symptoms of this disease, have been frequently described by writers, but under other and different names, and who have erred only in not searching more deeply into the *history* and *cause* of the affection they were about to

* Entitled, "De la Morve et du Farcin chez l'homme," par M. Rayer.

describe. Thus we have (says M. Rayer), the exact symptoms of glanders described by authors under the various names of phlebitis, of secondary syphilis, of scrofula, and variola. In dispensary practice, more especially, where diseases are *glanced* at, and then prescribed for, this disease is very liable to be overlooked, or confounded with those diseases it most resembles; independent of all those obstacles, there seems to be one still greater than any yet mentioned; I allude to the prejudice with which the *dignitaries* of the profession look upon anything new, anything which they themselves overlooked in the heyday of their glory, all of which they are pleased to designate nothing more nor less than an *innovation*, tending to disturb the dreary somnolency of an exclusive body. Thus quinine, iodine, auscultation, and the beautiful "Theory of the reflex function," have all in their turn, and of late years, been decried loudly and vehemently by a misguided minority of our profession. They were looked upon by the gentry of the old *regime* as tending to quackery and innovation, and as such should be blasted in their infancy.

Now the subject under consideration is viewed by this class in the same light, and one individual (holding no inferior station in the literary department of the profession), lately being interrogated respecting glanders, contented himself by stating, that very little is known about the disease, and we must *wait* for more data to work upon. Here, again, we have a fine example of "*darkness visible*." This individual, I should presume, has adopted the motto of the philosopher, who says,—"Malheur, malheur à l'homme sensible qui a osé dechirer le voile de la faculté, et refuser de se livrer cette illusion théatrale si necessaire à notre repos! son ame se trouve en vie dans le sein du neant; c'est le plus cruel de tous supplices."

I have witnessed a case where the glandered matter of a horse was introduced into the paw of a dog, by means of a bistoury. After the lapse of a few days the dog became indisposed; he appeared drowsy and dull; this was followed by the symptoms of a disease I believe peculiar to dogs, and vulgarly called "*snuffles*." There was a profuse discharge from the nose; and the dog, when made walk, appeared to be giddy, and staggered from side to side. He was killed at the end of a few days, and the lining membrane of the nose was found to be inflamed, and ulcerated spots were observed now and then during the examination of those parts. There were no enlarged lymphatics, or any other of those lesions generally seen in the posthumous examinations of glandered bodies.—T. H. B.

TREATMENT OF

OVARIAN DROPSY WITH POTASSA FUSA.

To the Editor of THE LANCET.

SIR:—During an extensive public and private practice of many years, I had frequently to regret the inefficacy of our art in the treatment of ovarian dropsy. Often have I seen the disease in young females, whose health in every other respect appeared to me to be perfectly good, and who could they have been cured of this affection might have lived to old age. While treating a case of what I have called encysted dropsy of the thyroid gland in a young female (and which I have briefly related in the 5th volume of the "Transactions of the Provincial Medical and Surgical Association," p. 282), I was very forcibly struck by the analogy subsisting between this disease and encysted dropsy of the ovarium, and I thought it possible that the efficacious mode of treatment adopted in the one case might apply to the other. I know that suppuration has been induced in the ovarian sac by other modes of proceeding, and the results have been such as not to encourage our adopting them. But the one by the potassa fusa has not, that I know of, been tried. I am also aware of the objections which may be urged to an attempt of this kind,—such, for instance, as the fluid being contained in several cysts, and the difficulty of limiting the inflammatory process set up in the peritoneum. The adhesion of the ovarian sac to the peritoneal membrane lining the abdominal muscles is no ground of objection, as this process must take place during the action of the caustic, and previous to the establishment of suppuration within the ovarian sac. I will now explain the mode of action of the proposed remedy.

A slough of more or less extent is made with the potassa fusa, in the integument of the abdomen, over the enlargement constituting the ovarian dropsy. This, after a given time, is thrown off, leaving an ulcerated surface. The caustic is again applied, and another slough is given off, and thus the practitioner proceeds, repeating the application until the peritoneum begins to feel the influence of the remedy; adhesive inflammation is set up in it, and in the membranous bag containing the fluid, and, ultimately, suppuration of the sac itself. Having thus established the suppurative action, emollient poultices are then to be applied, and the case is to be treated like that of any other encysted abscess, having its origin externally. This may now be more or less considered; the adhesions forming a kind of wall, or barrier of communication, between the abscess and the general cavity of the abdomen.

Should any of your readers think this suggestion worth attention, and make trial of it, I should feel much obliged by their communicating to me the results, either through the medium of your widely-circulated Journal, or addressed to me privately. I am of opinion, from what I witnessed in the case of the thyroid gland, that these hints may be turned to account. Of course it would be right to make the patient acquainted with the probable hazard there would be; but knowing the disease to be incurable, there are females who would rather try a hazardous proceeding, with the chance of a cure, than be left to their fate, as I have on another occasion illustrated.

It is needless to observe, that the patient should be of sound constitution in all other respects, and that her age and condition generally should be favourable. I am, Sir, your obedient servant,

CONGREVE SELWYN, M.D.

34, Clarence-square, Pittville, Cheltenham.
Nov. 27, 1837.

OSSIFICATION OF THE PLACENTA.

To the Editor of THE LANCET.

SIR:—Should you deem the following case to be sufficiently unique to deserve recording, it is at your service. Yours truly,

JOACHIM GILBERT.

Beaminster, Dec. 3, 1837.

I was requested to attend Mrs. B—— in her first accouchment; the labour, which was a natural one, terminated at the expiration of eight hours, and in about ten minutes followed the secundines, and on inspecting it I observed the whole body of the placenta studded with ossific matter (part of which I have preserved, and submitted to the inspection of my professional brethren of the town.) There was nothing peculiar as regards the separation of it from the uterus, the placenta being detached by the natural efforts of that organ.

I should state that my patient enjoyed a good state of health during gestation; and up to the present time, being two months since her confinement, has been perfectly well.

DR. FLOOD'S DISCOVERY OF THE ANATOMY OF THE CRURA CEREBRI.

To the Editor of THE LANCET.

SIR:—In Mr. Mayo's "Physiology," published this year, I met, a few days since, with the following passage:—

"I was not acquainted (meaning when he published his former edition), with a very important anatomical fact, which Mr. Solly has recently discovered, and read in a paper before the *Royal Society, viz.*: that the anterior fibres of the corpus restiforme stretch obliquely forwards, so as to be distinctly continuous with that part of the chord from which the motor fasciculi of the spinal nerves take their origin."—p. 220.

In my "Anatomy and Physiology of the Nervous System," published in 1828, at the house of Callow and Wilson, London, this anatomical fact is as distinctly stated as words can express it, as will appear from the following extract:—

"Each crus cerebri will be found to consist of an anterior external portion, continued from the pyramidal body, and a posterior internal portion, continuous with the olivary *and part of the restiform body.*"—p. 109.

I did not think at the time that this fact had not been observed by others, but if there be any "discovery" or originality in the matter, I hope that Mr. Mayo will do me the justice to admit, in his next edition, or in some other as public form, that I have a prior claim to Mr. Solly. I am, Sir, your obedient servant,

VALENTINE FLOOD, M.D., M.R.I.A.,
Lecturer on Anatomy and Surgery, in the Richmond Hospital School of Medicine, Dublin.

19, Blessington-street, Dublin,
Dec. 4, 1837.

VISITORS AT THE HOSPITALS.

To the Editor of THE LANCET.

SIR:—Permit me, through the medium of your humane periodical, to offer a suggestion to the public, which will appear bold, from its novelty, but which, being intrinsicall entitled to fair consideration, I trust will suffer no detriment from the anonymous character of the communication.

In your last week's Number you made some remarks on the great importance and desirableness of humanity in the proceedings of hospital surgeons; and I recollect some equally satisfactory observations in a former article, on the disposition of "nurses," and the utility of an occasional observation of their conduct by disinterested individuals.

Many of your readers have seen or read of the benevolent societies, or *Confraternities*, of Italy, which assuage an immense aggregate of human misery: One part of the functions of some of them is to visit the afflicted in hospitals. Now, Sir, would you or your medical brethren, object to associations of *non*-medical individuals, in England, for a similar object? Not, let it be fully understood, for any such purpose as *espionage*,—not to interfere with medical treatment, or to *thrust* any particular religious views on the patients,—but to inquire

after such matters as are calculated to cheer or tranquillise their minds from without; to communicate with their families,—promote their relief, if in great need,—assist the patient in his hope of obtaining employment when he leaves the hospital; in short, to do in a little way, for the poor, what the rich enjoy; viz., to make the mind easy under bodily suffering,—not the *least* important object, either in a medical or a benevolent point of view.

At the same time their functions would be a *check* on the official parties, both medical and others; so that, in case of positive neglect, or culpable lukewarmness in their well known and defined duties, publicity and inquiry would be facilitated. It might be as well that the visitors should not be subscribers to that particular hospital, and other means might be adopted to prevent suspicion and perversion.

No false modesty will induce me, Sir, to refrain from respectfully saying that this suggestion (perhaps not entirely new) *if* good, is *very* good! If it should afford matter for useful consideration to humane persons, it will be a satisfaction to the writer.

Yours, respectfully,

Dec. 11, 1837. P.

UTILITY OF LATERAL INCISIONS IN CERTAIN CASES IN WHICH SUTURES ARE NECESSARY.

A GIRL, 19 years of age, had suffered under chronic inflammation of the tonsils for a year, when a tumour appeared in the centre soft palate, and made a small opening in that part. Four years afterwards the patient applied to Dr. E. Zeit, who performed several operations on her for the cure of the fissure of the palate. These, however, were all unsuccessful. The fissure was small, and its edges much hardened by chronic inflammation, hence it was found impossible to pass the small insect needles generally used in the operation for staphyloraphy.

At length a couple of sutures were placed with great difficulty, and, in order to facilitate union, the author bethought himself of making a lateral incision into the substance of the soft palate, not far distant from the edge of the opening, for the purpose of avoiding any stress on the ligatures. This operation was executed on the 6th of December. On the evening of the second day the posterior stitch was tightened a little. The edges of the wound were affected with an inflammatory action, somewhat more severe than was desirable, but this was easily subdued, and after the lapse of a month, the aperture was very considerably diminished. The operator, in order to hasten the process of cure, again made, on the 10th of February, two lateral incisions of about half an inch long, on either side of the opening; this was followed by the best effects; the contraction of the wound was rapid, and after two days the opening was reduced to the size of a pin's head. The cure was completed on the 7th of March. The author seems inclined to believe, that by previously making the lateral incisions, and then merely stimulating the edges of the opening, fissures of the soft palate may henceforward be cured without applying stitches. — *Graafe and Walther's Journal*, Vol. XXV., No. 3.

Powers of the Roots of the Nerves in Health and in Disease; likewise on Magnetic Sleep. By HERBERT MAYO, F.R.S. London: J. W. Parker. pp. 39.

"I WISH the reader to conceive," begins Mr. Mayo, "that the nervous system consists of," &c. How *naïve* is this commencement! Does Mr. Mayo "conceive" his "reader" to be an idiot? "In deglutition," continues Mr. Mayo, "when the morsel reaches the root of the tongue, *I prefer to think*," &c., and "I *prefer* this." *Mr. Mayo* prefers! Who, in the whole of this sublunary sphere, cares one jot or one tittle *what* Mr. Mayo "prefers?" Would not this presumptuous style, in writing upon matters of science, be ridiculous even in Sir Isaac Newton?

But what is the meaning of Mr. Mayo's eighteenpenny pamphlet? He *pretends* to have discovered the reflex function (p. 20), and to have rejected it (p. 21.) And yet he is manifestly uneasy that another should enjoy the credit which will infallibly devolve upon the real author of that discovery.

Mr. Mayo observes, page 23,—

"In deglutition, when the morsel reaches the root of the tongue, I prefer to think that the lingual branches of the glosso-pharyngeal nerve carry a *sensation* to the *medulla oblongata*, from which, by an instinctive law, a *voluntary impulse* is issued along the pharyngeal branches of the same, and of other nerves, to the muscles of swallowing. I prefer this, and think it more likely, than that the process is automatic and withdrawn from the will, and the like."

But in page 15, Mr. Mayo has said,—"I am not disposed to conclude, with Magendie, that the upper part of the *medulla oblongata* is the seat of *sensation*, or of *sensation* and *volition* jointly." If these two para-

graphs be not absolutely contradictory, they are, to say the least of them, profoundly obscure. Mr. Mayo is evidently bemazed. All this arises from the fact, that Mr. Mayo would be the *discoverer*, and yet would be the *rejector* of the principle which he affects, but only affects, to despise.

Mr. Mayo says,—

"It is clear that *an influence, independent of the will, occasionally throws voluntary muscles into action, as appears in tetanus, and other spasmodic disorders*; and is shown remarkably in the physiological experiment of irritating the skin on the lower extremities, after the division of the spinal chord in the back, when the occurrence of action limited to the muscles of the lower extremities evinces that a connection exists, independently of the will, between sentient surfaces and the action of voluntary muscles. I have varied this experiment by dividing the spinal chord at once in the neck and in the back, upon which three unconnected nervous centres exist; and the division of the skin in either part (and especially at the soles of the feet in the two hinder portions), produces a convulsive action of the muscles in that part. *The same influence may then possibly regulate the unconscious actions to which these remarks relate.*

"The hypothesis which I here advance, and so far maintained the reasonableness of, is that which has lately obtained notoriety under the name of the reflex function of the spinal chord. It is based upon the facts, which I have before mentioned, and had observed and reduced to one theory in the year 1823. Dr. Marshall Hall, who invented the term 'reflex function,' has followed out the idea with great diligence, and has made several interesting and new experiments, showing *fresh* instances, parallel to my own published some years before, of the independent action of the segments of the double chord, and of their nerves.

"To myself this hypothesis, when it originally passed through my own mind, offered no attractions. I thought that the muscular actions of the human body in health (excepting the vital motions of the viscera), were better explained, by supposing consciousness to be at the bottom of all, than by supposing volition to regulate some, and a different principle others. I thought that this view accorded more with the simplicity of nature, more with anatomical structure, more with probability."

Now, why did Mr. Mayo, if these were his feelings and views, think it worth his while to claim the rejected discovery, not only in the last edition of his "Physiology," but even to the interruption of Mr. Faraday's lecture at the *Royal Institution*?

We shall not trouble ourselves with Mr Mayo's "segments" (query, figments?) of the nervous system. If true, they are not new; for Whytt divided animals into two, and Legallois into more than two, and actually calls the different portions of spinal marrow by these very terms, "segments." And what has Mr. Mayo done more?

Mr. Mayo says,—"*The spinal chord has no part in consciousness, and that the cerebrum and cerebellum are equally excluded from their part in consciousness, when they are separated from the medulla oblongata.*" *When* and *how* did Mr. Mayo learn that the cerebrum and cerebellum, when separated from the medulla oblongata, *have*, or have *not*, consciousness? What test, what proof, has Mr. Mayo discovered of this?

We will not at present devote another line to Mr. Mayo's "Roots of the Nerves." Such another hash of old and worn-out opinions we have not met with lately.

Let the reader compare all this with the quiet, plain, and cautious statements of Dr. Marshall Hall, in his "Lectures" and "Memoirs" on the nervous system, tracing the beautiful steps of his beautiful and expanded inquiry, from the *vis nervosa* of Haller, to the explanation of *all* the acts of *ingestion* and *expulsion*, and of the *orifices* and *sphincters* in the animal frame (we quote Dr. Hall's words), and to the rationale of the *whole class of spasmodic diseases*; and then let him judge of the comparative merits of these two physiologists, in this matter of the nervous system.

The British Medical Almanack, for 1838. Edited by WILLIAM FARR. London: John Churchill. 8vo. pp. 224.

THE valuable and varied information conveyed in this small work, renders it highly deserving of the patronage of all classes of the medical profession. The editor seems to have spared no pains in the preparation of the edition of the "Medical Almanack" now before us, and we have much pleasure in recommending it to the notice of our readers as a production in which they will find a concise account of most matters connected with medicine and medical affairs in general.

In addition to the Calendar, which, of course, forms the first article in the Almanack, we have a Summary of Meteorological Observations made at Chiswick during the

space of eight years, from 1826 to 1833, inclusive.

This is followed by Lists of the Members of the College of Physicians; of the Members of the College of Surgeons received during the year 1837; and of the Masters and Court of Examiners of the Society of Apothecaries. The Regulations for the Examination of Students, adopted by the two last mentioned corporate bodies, are given in full, but those relative to the admission of Fellows and Licentiates of the College of Physicians, are noticed in too brief a manner.

The various Medical Societies, and the Medical Charitable Institutions of Great Britain are next enumerated; and the work terminates with a Supplement, in which are contained several highly useful articles relative to the laws which affect medical men; vital statistics; poisons, &c. The article on "Prognosis," by the editor, is well worthy of attentive perusal, and will be found to contain much that is useful under a form which is new to the generality of English readers.

A NIGHT AT APOTHECARIES' HALL.

To the Editor of THE LANCET.

SIR:—I am fully aware that the following "passages from the examination of a candidate for the Hall diploma," lose half their richness on paper; and, moreover, that circumstances, deeply interesting to me as a party concerned, may appear, to many of your readers, to be trivial. There are, however, I imagine, some to whom the following statement may prove an useful lesson, if you can afford space for its insertion.

Botany,—the science which elicited a letter that appeared in THE LANCET of December 2, was the rock on which I myself nearly split. I had gone through my prescriptions with *celât*, producing an impression on my Examiner's mind that I was a profounder classic even than himself. In chemistry, too, I was found quite expert. I was well acquainted with materia medica, and got on so far swimmingly. I confessed my knowledge of botany to be very limited. Nevertheless I answered about a dozen common-place questions correctly, when the following took place:—

Examiner.—Were you an attendant at the Chelsea Gardens?

Candidate.—No, Sir.

Ex.—How was that, Sir?

Cand.—At the time when they were open I was working hard at surgery and surgeon's practice for the College, Sir, and to go from the City to Chelsea, would have taken more time than I could well spare.

Ex. (looking black).—Valuable institutions are open to young men of the present day, Sir, which they will not embrace, Sir. What is the chemical basis of a plant?

I answered.

Ex.—What is the natural basis?

At this I hesitated, when he exclaimed,—"You know nothing at all of botany, Sir. You are a member of the College?"

Cand.—Yes, Sir.

Ex.—*Where is the stomach?*

Answered.

Ex.—Very well, Sir. *Show me it in your own person.* Place your hand where it is situated.

I did so,—both the Examiners at the table rising at the same time to see a "Member of the College" *put his hand on his stomach*, hoping, I positively think, that I should place it on the hypogastrium.

Ex.—Very well, Sir. Did you ever see the pectoralis major?

Cand.—Yes, Sir.

Ex.—How often?

Cand.—Perhaps a hundred and fifty times.

Ex.—Oh! Pray describe it.

This was done correctly, when he exclaimed, with a dissatisfied air,—"Why, that is true, but you have left out of sight that the superior fibres pass downwards, the middle transversely, and the inferior upwards. You have not said whether the tendon be round or flat. Sir, I must tell you that your knowledge of anatomy is superficial.

Cand.—It was not so thought at the College, Sir, where Mr. Samuel Cooper compli——

Ex.—That will do, Sir; we will see what you know of physic. Give me the symptoms of mesenteric disease in children.

Amongst others, I mentioned tumefaction of the abdomen. "What, Sir; tumefaction! That would do for a *Roman*, Sir; why can't you say swelled, Sir?"—at which bright idea both Examiners enjoyed the respite of a chuckle.

Ex.—Well, Sir, any more, Sir?

I hesitated.

Ex.—Can't you think, Sir?

After waiting some time, I told him that I could not think of any other just then.

Ex.—Indeed, Sir, why every old woman knows it; it's the most prominent symptom, Sir. Why, *the child's belly is hot*, Sir.

It was in vain that I protested that I had said there was general fever, and, of course, heat of skin. I did *not* say that *the belly was hot*, and that was omission enough.

He continued,—"I tell you what, Sir, we have been here two hours, and have done a mere nothing; your knowledge is very shallow, Sir; your answers are very vague."

I became irritated, and said,—"Sir, *your questions* are so vague that I cannot give clear answers." He was hurt at this—"had no wish to confuse me," and so on. Another Examiner at that instant coming up, I was turned over to him to have a few questions put to me, with an intention of proving the "vagueness" of my replies. This Examiner happened to be a gentleman of kind manners,—now no longer, I believe, a member of the Court. He asked me a series of questions on the symptoms and cure of diseases of the chest, all of which I answered, so different was his method of questioning. From the bad character which he had received with me, he at first put them in a severe tone, but as we progressed I could see his brow clear, and he assumed a surprised expression. At the end of about twenty minutes he turned to my former tormentor, and said,—"Sir, this gentleman's answers to *me*, have been quite clear, and perfectly satisfactory; indeed, I consider that he displays much talent." I never saw a man so discomfited as the person thus addressed. At last he managed to mumble forth, "Ah! I think he may have talent, but he wants application. I suppose we must give him his diploma;" and I was bowed out, *a licentiate*.

To all would-be apothecaries I would humbly suggest that they should never make a candid and honourable confession of having neglected "valuable institutions," and they may rest quite assured that their Examiners, unless, indeed, they meet with a "*rara avis*," will never discover the omission. I am, Sir, your humble servant,

A LICENTIATE OF SIX MONTHS' STANDING.

London, Dec. 6th, 1837.

MEDICAL SOCIETY OF LONDON.

Monday, Dec. 4, 1837.

PERFORATION OF THE STOMACH, AND ITS CONNECTION WITH CHLOROSIS (?)

Mr. CRISP detailed the following case:—He was requested on the 26th of last month, at half-past two in the afternoon, to visit a young woman aged twenty. On his arrival he was informed that at half-past ten that morning she ate a hearty breakfast, and felt and appeared as well as usual. At eleven o'clock she was seized with violent pain in the region of the stomach, extending over the abdomen. Some essence of peppermint failing to relieve this pain, a draught, composed of spirits of lavender and camphor mixture, was administered, after which she vomited several times, the matter ejected being reported to consist of coffee, bread, and butter. A teaspoonful of brandy, which she took at this time, was rejected. It appears, from the account furnished by her mother, that for several years past she has been in a delicate state of health, but has followed her occupation of a domestic servant. She has been subject to palpitation of the heart, and pain in the region of the stomach after eating. Her menstruation, though regular, was small in quantity, and she has always had a pale, chlorotic appearance. Her spirits have not been depressed, and her mother is quite *sure she has not taken poison*. At the time Mr. Crisp was called in, the following symptoms were present. The countenance was pallid and ghastly; the pupils contracted; pulse about 100, small, and rather feeble; excessive pain over the whole region of the abdomen; no preternatural distension; tongue red and dry; skin warm; bowels opened in the morning. Six leeches were ordered to the abdomen, with hot fomentations; a scruple of powdered ipecacuanha, and a mixture containing sulphate of magnesia and peppermint-water, was administered. In the evening, at eight o'clock, she was much the same; the pain, however, was slightly mitigated; the bowels not acted on by the medicine. A quantity of watery fluid was thrown up after the administration of the powder. Eight ounces of blood were taken from the arm, with the effect of producing faintness, and the expression of relief. Hot fomentations were continued to the abdomen; a grain and a half of opium, with three grains of calomel, were ordered to be given, and repeated in three hours, if the pain did not abate. The blood was not buffed or cupped. At eight o'clock the following morning he visited her; she had not slept during the night, had complained of much thirst, and drank upwards of a quart of water. The pain was not relieved; the countenance was more ghastly; the pulse feeble; skin cold. She has passed no urine since twelve o'clock last night; the bladder not distended. "She thinks she should be better if the bowels were acted upon." The abdomen hard, and rather more distended than yesterday. A purgative mixture, with ammonia, and an enema, were ordered. She died at half-past ten, A.M., nearly twenty-four hours from the first attack of pain. After her death Mr. Crisp ascertained, from a female servant who lived with her during the last eight or nine months, that she had generally pain and vomiting after eating; she could not incline towards the left side without pain being produced in the region of the stomach. She was in the habit of drinking vinegar, for the purpose of reducing her bulk; and for many years had eaten large quantities of tea, which she carried about in her pocket. She also salivated herself eighteen months ago, by taking calomel, as she believed she was bilious.

The body was examined twenty-eight hours after death. The external appearance of the body was plump, firm, and muscular;

the skin, especially that of the face, very white; the abdomen considerably distended the parietes covered with about an inch of fat. On cutting into the cavity of the peritoneum a large quantity of fœtid gas escaped; the omentum, liver, and some of the intestines, were covered with a layer of yellow plastic lymph. The abdomen contained about three pints of a whey-like fluid, mixed with flakes of lymph. The peritoneal covering of the stomach not reddened or congested. On pressing the stomach gently, fluid was seen to issue from a small round aperture, with smooth edges, which would admit the passage of a common-sized pea; this opening was situated at the posterior part of the lesser curvature, about an inch from the concavity, and midway between the cardia and pylorus. Directly opposite to this aperture, in the anterior part of the stomach, was another opening, about the size of a shilling, with smooth defined edges. The contents of the stomach, which were similar to those of the peritoneum, were preserved and tested, but exhibited no signs of any poison being present in them. On cutting into the stomach the mucous lining was found to be much corrugated, having a soft pulpy appearance, but not easily detached by the finger. No redness or ecchymosis over any part. The edges of the smaller aperture were as thin as the sixth of an inch, but those of the large perfectly smooth, and had the appearance of having been cut with a sharp instrument; in the middle of the greater curvature was a small ulcer, with slightly elevated edges, and some portions of the mucous membrane appeared thinner than natural. The fluid on this membrane had not an acid taste. The inner lining of the œsophagus was of a red-purplish colour, but there was no abrasion. The small intestines contained a fluid similar to that in the cavity of the abdomen; the inner lining was healthy, and covered by a whitish mucus. The large intestines presented a natural appearance, and were filled with a soft excrementitious matter. The liver was very white, the spleen soft and pulpy. Nothing remarkable was observed about the uterus, except that the vesicles of Graafe were more numerous, and larger than usual. The bladder was empty. The pericardium contained about one ounce of serum; heart larger than natural; the parietes of both ventricles hypertrophied; no blood in their cavities. The auricles contained coagulated black blood. The valves, and every other part of the heart, natural; other parts healthy.

This case Mr. Crisp considered of importance in a medico-legal point of view. Four cases of a similar kind had happened in his neighbourhood within a few years. All these cases occurred in young girls, in whom there was a disordered state of the uterine function. The ages of two of these patients were fifteen, one was sixteen, and another twenty years of age; in all of them the stomach was perforated near the cardiac orifice. Death took place in sixteen, seventeen, twenty-seven, and thirty-six hours. Sixteen other cases of this kind he had found on record, fourteen of them occurring in females, one only of whom was married; and in most of them irregularity of the uterine function existed. He (Mr. Crisp) was inclined to the opinion that in these cases there was much connection between the disease and the uterus. In chlorosis a peculiar state of the gastric juice existed, which gave rise to the appetite for strange and unnatural kinds of food. Might not this kind of ulceration be the result of this acrid state of the gastric juice? In two of the cases which had occurred in his neighbourhood, it was supposed by some that oxalic acid had been swallowed, as a small quantity of this poison was detected in the stomach, by analysis after death. The jury, nevertheless, returned a verdict of "Died by the visitation of God." He (Mr. C.) was not surprised that oxalic acid was often found in the stomach, when its contents were analysed, considering the quantity of oxalate of lime which some vegetables contained.

Mr. Kingdon considered that it was possible that interstitial absorption of the muscular coat of the stomach, and connecting cellular tissue, might have taken place, and proceeded until the external and internal coats of the stomach had given way.

Mr. Headland and Mr. Dendy were of opinion, that as there were no marks of increased action about the ulcers, and from the other circumstances of the case, the perforations were the result of the action of the gastric juice on the stomach after death, the only objection to this opinion being the circumscribed size of the ulcers. The first of these gentlemen considered that the inflammation of the peritoneum coming on in a weak frame might be considered as the cause of death, altogether independent of the appearances in the stomach.

Dr. Bennett thought a diseased action must have been going on in the stomach for a length of time, and have produced the perforations. He did not think the gastric juice, either before or after death, had anything to do with the matter. It was not necessary that redness should exist as a sign of the previous presence of morbid action.

Mr. Crisp considered that it was not probable the perforations were post-mortem effects. The symptoms of the case were unequivocally those of perforation of the stomach, and the peritoneal inflammation could only be considered as the result of the escape of the contents of the stomach into the abdomen.

Monday, December 11, 1837.

Mr. BRYANT, President.

ULCERATION AND PERFORATION OF THE STOMACH.—CHLOROSIS.

THE discussion on Mr. Crisp's case was resumed.

Dr. T. THOMSON had seen three cases of perforation of the stomach by the gastric juice after death. In two of these instances the edges of the ulcer were decidedly ragged; in the other instance the perforation was not complete, the lesion only having extended to the mucous and muscular coats. If the perforation had gone quite through, he thought the edges would have been ragged. The mucous membrane around was always softened in these cases.

Dr. BENNETT believed the softening of the mucous membrane to be always present in cases of this description; the openings might, or might not, be round. In Mr. Crisp's case there was no softening, or any other sign of morbid action, the perforated portions appearing as if they had been punched out. Hence his opinion on the case. The most important part of the subject was the diagnosis and treatment of cases of perforation of the stomach. In some cases which Dr. Stokes had recorded of perforation of the intestine, large doses of opium, to arrest the peristaltic action of the bowels, with the avoidance of purgatives, and the allowance of a very small quantity of food, was found successful in effecting a cure.

Mr. WHITMORE related a case in which a man, apparently in good health, was suddenly seized with severe pain in the bowels, and died in the course of a few hours. A perforation in the duodenum, about half an inch from the stomach, was detected, from which there had been escape of fluid into the peritoneum, producing violent inflammation.

Mr. HEADLAND said, in all cases of perforation of the stomach, after death, by the gastric juice, the perforation occurred in the cardiac portion. In Mr. Crisp's case the perforations were in the centre of the stomach.

Dr. WHITING, in reference to Dr. Stokes's cases, said, if we could determine, in all cases when perforation of the intestines had taken place, and that large doses of opium were as effective as described, then an important fact would be brought to light. But the question arose, whether the symptoms, such as are observable in cases of perforation, might not exist, and no perforation be present. He had seen cases in which there was sudden pain in the abdomen, extending over all that region, loss of strength, and remarkable collapse of the features, the pain being increased on pressure, get well under antiphlogistic treatment. How were we to distinguish the inflammation consequent upon the escape of the contents of the bowels into the peritoneal cavity, from inflammation produced from other causes, and where no perforation existed. He thought the best criterion that no perforation existed, was the recovery of the patients, for he believed no case of perforation of the intestinal canal recovered.

Dr. T. THOMSON said a tendency to ulceration of the stomach seemed to accompany chlorosis in many cases; he had noticed a great tenderness over the epigastrium in instances of this affection; yet all kinds of stimulants were administered, and thus the irritation of the stomach was increased, and everything went wrong. He had afterwards advised the application of leeches, and other antiphlogistic measures, and in this way health was restored, and the chlorosis occasionally removed. Chlorosis, he thought, in some instances, might be the result of disordered stomach, and not the disordered stomach, as supposed, always the result of the disordered uterine function. He was convinced that though many cases of chlorosis did well under the use of stimulants, in others much harm was done by them.

Mr. PILCHER said his colleague, Mr. Grainger, attended a young woman with chlorosis, in whom there was great disorder of the stomach. She got apparently well, and after walking one morning a considerable distance, she felt a sudden pain in the lower part of the abdomen; peritonitis supervened, and she perished. In this case there were two ulcerations, exactly opposite each other, in the stomach. The fluid, escaping from the stomach, had gravitated to the lower part of the abdomen, and hence the seat of pain was accounted for.

WESTMINSTER MEDICAL SCCIETY.

Saturday, December 9th, 1837.

Dr. WILLIAMS, President.

REPORT OF THE COMMITTEE APPOINTED TO INVESTIGATE THE SUBJECT OF "POISONOUS CANDLES."

THIS evening was chiefly devoted to the reading of the Report framed by the Committee, which the Society had appointed to investigate the subject of *poisonous candles*. The Report, which was read by Dr. GRANVILLE, was of great length, and entered fully into all branches of the subject. The Committee, in coming to their various conclusions, had done so on the most indisputable evidence, partly experimental, partly documentary. In framing the Report for the Society, however, the Committee did not wish to give any decided opinions on the subject, but rather to leave the facts as they

stood, for the members and the public to decide on the question.

The Report was divided into several sections:—

1st. *The Reasons for Forming the Committee.*—These we need not repeat as they have been sufficiently explained in several recent numbers of THE LANCET.

2nd. *The History of the Stearine Candles.*—About twenty-five years since M. Chevreuil commenced investigating facts respecting common tallow, and, after the unremitting labours of ten years, succeeded in discovering that it consisted of two distinct substances, which he denominated stearine and elaine. The stearine, from its beautiful colour and consistence, was considered to be a very elegant material for the manufacture of candles, but it was found, on experiment, not eligible for that purpose. About six years since, however, candles made of stearine were first manufactured in Paris. The mode by which this was effected was, however, kept a profound secret. The stearine candles were afterwards introduced into this country; at first the manufacture was very limited, and the secret mode in which the stearine was made eligible for the formation of candles was confined to the knowledge of a few manufacturers. The secret, however, soon got hawked about, and was soon offered to candle-makers for sale, and the manufacture of this description of candles soon became general, and as they were sold at a low price they were extensively used. Respectable houses of business, unable to compete with the "new lights," were compelled, in self-defence, to manufacture the same description of candles. The material which was employed for the purpose of fitting the stearine for use in this way was well known to the trade to be white arsenic; but the public were unaware of the fact until Mr. Everitt made the disclosure in a lecture given last summer before the *Medico-Botanical Society*. Dr. Scott had since introduced the subject into this Society, and hence the formation of the Committee. The Committee had instituted two series of experiments on various candles obtained from different shops, as it did not feel satisfied with the admissions made by parties concerned in the manufacture. These experiments were chemical and physiological; the former were mostly repeated before the members of the Society at a late meeting, by Mr. Everitt, and fully reported in THE LANCET at the time. Mr. G. Bird had ascertained that when these candles were burnt in such a manner as to allow the free mixture of the oxygen of the air with the flame, arsenious acid in vapour was given off. When the admission of air was interfered with, the black oxide of arsenic in vapour was the product; and when combustion was exceedingly low arseniuretted hydrogen was evolved. The Committee had also experimented with candles procured from club houses, private families, &c.; arsenious acid was detected in those candles which were composed of stearine, while none was found present, in any instance, in the true wax lights, the true spermaceti, and the old-fashioned composition candles. The physiological experiments were made on various living animals, and were so conducted as to ensure an accurate result. For this purpose four deal boxes were made, two of them marked A and B, measuring three feet by two; the others, marked C. and D, two feet by two, and both sets of them three feet deep. Into one of each of these sized boxes two or three arsenical candles were kept burning; in the others candles which were known to be free from arsenic. The temperature of the interior was regulated by several holes made near the top and bottom of these boxes, and indicated by a thermometer placed inside, the temperature being kept as nearly as possible to that of summer heat. The tops of these boxes were moveable, and there was a glass window on the door for observation. They were placed two feet and a half from the ground in a lofty and spacious apartment of Dr. Scott's house in the Strand. Into the two large boxes, A and B, the following animals were placed:—In cage A, two linnets, two guinea-pigs, and one rabbit; in B, two guinea-pigs and one rabbit. In the box marked C, two bullfinches were placed; two similar birds were placed in D, all of them plentifully supplied with victuals and drink. The experiments with the larger boxes commenced on Monday, the 27th of Nov., at 10, A.M.; those in C and D at the same hour on the Tuesday. All the experiments ended on Saturday, the 2nd of December. The experiments were carried on from 10 A.M. to 10 P.M., daily. Observations were made during the whole of the period, and hourly remarks on facts placed upon paper. These records the Committee laid on the table of the Society, and merely now state the phenomena observed, leaving the members to draw their own conclusions. One of the birds in A, after being two hours in the box, became evidently affected, and remained more or less so during the day; at night, after the experiment had ceased, it recovered. The following morning, however, it died, after being again, for one hour, subjected to the vapour of the candles in the box, while its companion perished six or seven hours afterwards. Three linnets were then placed in the box with two burning arsenical candles; they seemed much indisposed during the day. The next day three candles were placed in this box; the birds showed many symptoms of uneasiness, and kept their beaks open; the next day, after being in the box three hours and a half, one of them died; the following day its companions also perished, though in the

early part of the morning they seemed more lively than usual. The respiration of the little animals first became affected, the difficulty of breathing being indicated by constant gasping for breath; convulsions of the whole body succeeded, then great prostration of muscular power, intense thirst, evidenced by their drinking constantly and copiously of water, their last effort being an attempt to drink; they perished with their eyes closed, and with widely-extended beaks; the bullfinches were exposed at first to two candles, and afterwards to three, and perished with like symptoms at the end of forty-eight hours. Seven birds perished in the week; they drank four times more water than the birds in the boxes with pure lights; in addition to the other symptoms the loss of all desire for food was mentioned, and diarrhœa, the matter voided being a greenish fluid. The birds in the boxes with pure lights were as gay at the end of the experiments as before they commenced, and ate and drank as usual; in fact, no evidence of anything extraordinary was observed in them. The larger animals in the boxes with the arsenical candles showed symptoms of uneasiness on the second day, their eyes became dull, they yawned frequently, they refused their usual victuals, and only took a very small quantity of green food; they drank a good deal of water towards the end of the experiments. The animals in the other boxes remained perfectly well. In order to ascertain what became of the arsenical vapour, on the third day a small dish of water was placed in the box, and a platinum dish suspended over the flame of the candles. Arsenious acid was detected in the water, and was found deposited on the sides of the dish in considerable quantity.

Regarding the information which had been collected by the Committee, it had been ascertained that, according to the degree of combustion, arseniuretted hydrogen, black oxide, or white oxide of arsenic, in the state of vapour, were given off. The first of these was a rare product; the second was hardly likely to occur at the temperature at which the stearine candles burnt; the third was accordingly the most common. Two fatal examples of the ill effects of the first were mentioned; one of these occurred in the person of the celebrated chemist, Gehlen, the account of whose case is to be found in the "Journal de Chimie," for 1815. While occupied in the manufacture of arseniuretted hydrogen, he felt anxious to ascertain when the arsenic mixed with the hydrogen, in attempting to do which he inhaled a small portion of the vapour; the remedies employed to remove the ill effects which followed were unavailing, and he perished. The portion of the gas which escaped from the vessel must have been very small, as his coadjutor in the experiments stated that no odour was to be detected. The other case of death from the inhalation of this gas, the Committee had the authority of Mr. Phillips for mentioning, as having occurred recently at Bristol. Regarding the deleterious effect of arsenious acid vapours on the system, the Committee mentioned the case of Dr. Joseph Walt, who being desirous of trying this gas as a remedy in cases of icthyosis, determined on submitting his own person to an experiment, for the purpose of ascertaining its probable effects upon the system. Accordingly, he placed six grains of arsenious acid in a chafing-dish, which he removed to some distance in the room; he was soon affected with shortness of breath, constriction across the chest, and other symptoms, which led to the conclusion that the arsenious acid vapour was poisonous. His friend repeated the experiment afterwards with similar and even more severe results. Dr. Scott, during the time he was superintending the experiments on the animals, found his eyes much affected, and this he attributed to the vapour arising from the arsenical candles; for, after the removal of the apparatus for carrying on the experiments, he did not experience any further annoyance of the kind.

Dr. Merat, in the "Dictionnaire de Matiere Medicale," stated that he had found flies exposed to the vapour of black arsenic perish. The effects of arsenic on the miners in Saxony and elsewhere, were also referred to, and also the bad results which take place from the use of this mineral in various manufactures. Arguing, then, from the facts which were presented, and from numerous cases resulting from the use of arsenic, recorded by medical men, the symptoms in which were similar to those observed by the Committee, would it be too much to assume that the extensive use of these candles in clubhouses, churches, theatres, &c. might be possibly injurious? Take, for instance, the supposition that Drury-lane Theatre was lighted with the arsenical candles,—about 152 candles were required for the several chandeliers in the house,—there would then be about 608 grains of arsenious acid passing off in the form of vapour durthe time of the performance. Would not the effects be injurious to some persons in the assembly? The effects of arsenious acid applied to the skin might also be mentioned. M. Roux had recorded a case in which the arsenical paste being applied to a small ulcer proved fatal. What, then, might be the effect of the gas applied to the mucous membrane of the bronchia.

A member of the Committee had entered into a correspondence with M. Chevreuil, and Dr. Pariset, Secretary to the *Royal Academy of Medicine*, in Paris; the replies given by these gentlemen were important, and were also laid before the Society. M. Chevreuil says, that it is unnecessary to mix arsenic with stearine, for the purpose of

forming a candle, and is glad that the subject has been taken up in the manner it has. In the reply of the Prefect of Police of Paris, who was also written to, that functionary stated that when it was ascertained that arsenious acid was present in some candles which were manufactured in that capital, an inquiry was instituted into the subject. The Committee appointed for this purpose, consisting of many distinguished men, stated that they had found arsenious acid in the candles; they had considered, from experiments they had made, that the vapours of the gas were dangerous to the animal economy, and that the use of the candles should be prohibited by government. All the candles containing arsenic were accordingly confiscated, and the future manufacture of them prohibited. The authorities in Prussia had also forbidden the use of orpiment, which was employed for the purpose of colouring wax candles.

The Committee had also to offer some *practical remarks* on the subject. The candles in question went by a variety of names, such as "German wax-lights,"—"Venetian wax candles,"—"Stearine candles,"—"Imperial wax,"—"Moulded wax,"—"Tropical wax candles,"—and others; each manufacturer giving a different name to them. Arsenic was said to be required for the purpose of hardening these candles, but the Committee had learned that a small quantity of wax answered the same purpose. With regard to the characteristics of the candles containing arsenic, the following, among others, might be mentioned,—the lowness of the price at which they were sold; this, however, was not always a valid test, inasmuch as one of the Committee had sent for a genuine wax candle, at the full price, but which was ascertained afterwards to be of stearine, and to contain the poison. These candles had always plaited wicks; when the surface of wax or spermaceti candles was rubbed with an ivory knife, it still remained bright and clear; this was not the case with the stearine candles, which were dull after such a proceeding, and no process would restore the polish. The stearine candle had a spongy, porous appearance when snapped in two; the spermaceti presented the appearance of a lump of camphor, or a watery turnip, while the wax offered to the eye a series of concentric laminæ around the wick. When the stearine candle was extinguished, a garlic odour was perceptible from the wick. It was also found that a bell-glass, suspended over the steady flame of a stearine candle, had a white powder (the oxide of arsenic) deposited on its sides.

The *conclusions* at which the Committee arrive are, that the candles in question have been manufactured for the last two or three years in this country, and that the practice of making them is on the increase daily. The Committee conceive that the vapour given off from them during combustion is likely to be prejudicial. In closing their Report, the Committee express their wish to be of service to the public in a matter of so much importance, in the absence of all medical police in this kingdom, the only country in Europe where the public health is so little regarded by the governing powers.

Dr. A. T. Thomson said, there was a test for these candles, which, after repeated and extended observations, he had found to be a correct one; the surface of the pure candles, around the burning wick, was always a level space, while in the stearine, arsenicated candles this space always formed a hollow cup, with a thin transparent ragged edge. Though on his being appointed on the Committee he had some doubt respecting the injurious effects of the candles in question, the Report had fully satisfied him on the subject.

Mr. Barclay, a manufacturer of candles, stated that this test might be fallacious, other kinds of candles occasionally giving the same appearance during combustion.

Dr. A. T. Thomson believed the appearances to be peculiar to these candles; the ragged rim in other candles, all kinds of which he had burnt, was confined to one side of the flame, and this opposite to the current of air from a door, or other draught. The test, of course, was to be only looked upon as a collateral one, but many of the other tests being present, this one should also have its weight.

A discussion of considerable length now ensued as to the course the Society should pursue respecting the printing of the Report. Dr. J. Johnson had offered to print it in his Journal, and present the Society with a thousand copies gratuitously,—was this offer to be accepted or not? It was argued that as a matter of finance the subject should be left with the Council of the Society; that however liberal was the offer which had been made, the Society should not accept it; that the Report might require amending before it went before the public; these, and various other points, were urged, and the subject was eventually adjourned until next Saturday (to-day.)

The thanks of the Society were unanimously voted to the members of the Committee, and to Drs. Granville and Scott, in particular.

We may take this occasion of mentioning a fact, on the authority of some members of the Committee, that the *spermaceti* candles, in no instance, have been found to contain arsenic. We have seen a candle of spermaceti into which the mineral was introduced by order of the Committee, and its appearance is much altered for the worse. London, for the last few days, has been placarded with immense bills, headed "Arsenic in Candles," &c.; and, among

other candles which they enumerate as containing arsenic, *spermaceti* is mentioned, and this Journal referred to respecting the matter. This placarding is evidently a *ruse* on the part of some commercial speculators, and so far as we have mentioned, at least, does not merit belief, the spermaceti candles being pure.—*Rep.* LANCET.

BRITISH MEDICAL ASSOCIATION.

Tuesday, Dec. 12, 1837.

A MEETING of Council was held this evening. Members present:—

Dr. WEBSTER, President.

Messrs. Davidson; Evans; Delph; Farre; Harrison, Sec.; Herring; Hooper; Ireland; Wagstaffe; Davies, Solicitor.

The following gentlemen were then proposed and elected members of the Association.

Mr. John Potter, Ongar, Essex; Mr. F. D. Potter, Ongar, Essex; Mr. Nunn, Duke-street, Westminster; Mr. Jones, Eldon-place, Vauxhall; Dr. James Stewart, Portsmouth; Dr. G. J. Davey, Portsea.

ELECTION OF A COLLECTOR.

Mr. J. A. Dowie having entered into satisfactory securities, was elected Collector to the Association.

Mr. JOSIAH BURROWS, of Stonehouse, being introduced to the members by the President, addressed the meeting. He had, according to his promise given on a former occasion, called a meeting of the medical men of the towns of Devonport, Stonehouse, Plymouth, and the neighbourhood, amounting in number to about thirty. He read to them the Address which had been delivered by the President at the annual meeting of the Association. He succeeded in organising a Committee of seven of the most respectable practitioners in the district, and explained away many of those erroneous impressions which had gone abroad respecting the objects of the Association; that its object was the union of the profession, and not, as had been circulated, to sow dissension among its members.

A communication was received from Dr. James Stewart, of Portsmouth, stating, that he hoped to be able to form a Branch Association at that place.

A communication was also read from Dr. Willmot, of Stroud. He stated that he was doing everything to keep alive the happy union which existed amongst the medical practitioners of this borough. Only one or two had refused to join them. He was glad to say that the union was more energetic than ever; he was about forming a Branch Association in the town.

A memorial from Dr. Willmot and other gentlemen was also read. He deprecated the present system of tender, and low remuneration afforded to medical officers of Unions; and also the arbitrary power exercised by Guardians, and ended with a recommendation to establish a medical governing board to refer all matters respecting the medical attendance on the poor.

The memorial was signed by—

W. B. Willmot, M.D.
D. Cargill, M.D.
C. Sweeting, Surgeon.
J. T. Jones, Surgeon.
John Hampage, Surgeon.
Daniel Smith.
Charles Lowe.
C. W. Turner.
E. A. Uthwaite.
Joseph Woolen.
George Leonard.

Mr. Hillies then proposed, and Mr. Davies seconded—"That the thanks of the Council be presented to Jonathan Toogood, Esq.; — Haviland, Esq.; W. Axford, Esq.; and the other gentlemen of the Bridgewater Medical Association, for their independent and manly conduct regarding the proceedings of the Guardians of the Bridgewater Union, as to the medical attendance on the poor of that district, and for their zealous and firm conduct in supporting the honour and dignity of the profession."

The Council then entered into the subject of medical attendance on the poor, and discussed many points connected with this important subject.

The meeting adjourned at 12, P.M.

BRITISH MEDICAL ASSOCIATION.—A general meeting of the medical practitioners of Plymouth was last week held in that extensive and highly respectable town, with a view to promote the objects of the above Association, when a Committee of seven persons was appointed to correspond with the Association in London.

CURE FOR VENOM BITES.—M. Tschiffely has written to the French *Academy of Sciences*, to state, that during his stay in Brazil he cured fourteen negroes, bitten by venomous serpents, by the external application of turpentine. He continued the application for an hour, and even succeeded when the wound had been inflicted forty-eight hours before. He has cured the stings of scorpions, &c. in the same manner, and believes that this remedy would be efficacious for the cure of mad dogs.

THE LANCET.

London, Saturday, December 16, 1837.

"MEDICINÆ tota ars in observatione est," is a maxim the truth of which all medical men admit, although there be few of them in the hospitals of this country who seem to be influenced by the precept therein inculcated.

The foundation of the healing art is, beyond doubt, based upon a strict and careful observation of the phenomena which the living body presents in health and in disease; and nothing distinguishes the practical surgeon from the book-learned, but really ignorant, pretender to professional knowledge, more than the prompt, efficient, and skilful aid which the former affords upon pressing occasions, as compared with the shuffling, blundering, puerile conduct of the latter, whose science is stored up, not in his head, but in his library.

It must be confessed that this melancholy want of sound practical knowledge, evinced by so many of our hospital physicians and surgeons, is to be explained by the very defective system of education under which they have been brought up; and, so far as regards the "senior" members of our hospital staff, by the fact of their having received no education at all.

Some thirty years ago the medical youth of this country were hurried away, before the completion of any course of study, before they had acquired even a decent notion of their "humanities," to exercise what was then deemed surgery, upon the field of battle. This military, rather than scientific art, they practised in the most industrious manner for a long series of years, and it would now, perhaps, be too much were we to require from them any large amount of knowledge beyond the line of operations to which they were originally devoted.

Since the expiration of the period just described, an opposite principle has prevailed, and has, at length, grown into an evil of such magnitude, that, unless some strong hand intervene to arrest its progress, the science of medicine will, sooner or later, succumb under its pernicious influence.

Theory is the idol which the men who have assumed the right of regulating medical education in this country, have set up in the place of practice. "Certificate" is the pass-word to medical honours,—attendance upon lectures the *sine qua non* of fitness for undertaking the practice of medicine. The consequence of this abominable system is, that the student, wearied and confounded with the trash which is doled out to him under the denomination of "recognised lectures," has but little taste, and still less time, for the study of matters of the most vital importance. Crammed with Doctor A.'s lectures on the practice of physic, with Mr. B.'s lectures on chemistry, Professor C.'s on surgery,—in short, with a series of discourses, for the indication of which the whole alphabet would not suffice, he is re-crammed by a grinder, and then committed (*rudis indigestaque moles*) to the tender mercies of the bears in Blackfriars. But the influence of this system is not confined to the student alone; it is manifested, in a still greater degree, in his teachers, and in most of the "distinguished" men attached to our hospitals. Accustomed to consider the whole duty of a teacher of medicine to be the signing and delivering of a certain number of certificates within the year, these "distinguished" individuals seem exclusively devoted to the task of multiplying courses of lectures (for which certificates are cunningly required), and of fabricating discourses in which their own merits, acquirements, and talents, are lauded in the most unblushing and disgusting manner. The natural consequence is, that they take, at length, the shadow for the morsel, fancy themselves consummate practitioners, when they are only delivering empty harangues, and neglect altogether that patient and laborious method of observation from which alone a true knowledge of the healing art, in its various branches, can be derived.

We might point out several specimens of this latter class amongst the "distinguished" men who ornament the medical chairs attached to the hospitals of this metropolis, but, for our present purpose, and as a specimen, *par excellence*, we could not select a more worthy example than Mr. SAMUEL COOPER, Professor of Surgery at *University College*, London. Were we to search all England, Wales, Ireland, and Scotland, through, we could not discover a gentleman who seems better acquainted with the method in which a patient *should* have been treated, *after* he has ceased to live, whilst his mind appears incapable of comprehending, *during* a patient's life, *those urgent indications without which all chance of recovery would be out of the question*. To this conclusion we are very unwillingly forced by a perusal of the clinical lecture delivered by the said Mr. COOPER, at *University College Hospital*, on the 31st of October last, and published in THE LANCET of December the 9th; and by a perusal of another lecture, on the same subject, delivered on the 21st of November, in the *University of London*, and lately published by Mr. COOPER for limited circulation amongst a few friends.

It is scarcely necessary to remind our readers that the subject of *both* the lectures now alluded to, was the late unfortunate JAMES CHAPLIN, who perished at *University College Hospital*, under circumstances of a very distressing and humiliating nature. It is not our intention at present to repeat the various charges which we thought it our bounden duty to prefer against Mr. SAMUEL COOPER, in reference to the *real* cause of JAMES CHAPLIN's death; these were fully exposed in our Number for last week, and, moreover, fully substantiated by evidence derived from Mr. COOPER's *own notes* and observations—the notes which that silly and short-sighted personage accused us of suppressing. We now propose to indulge ourselves for a time, and as Mr. COOPER has thought fit, in his lecture of the 21st of November, to charge us with ignorance, misrepresentation, and so forth, we shall take care that the public know on whose side the "ignorance" and "misrepresentations" lie, by simply confronting Mr. COOPER, at *University College*, with Mr. COOPER at *University College Hospital*. We have heard of the cameleon changing colour, but, assuredly, such a change from white to black has never before been exhibited by any human biped.

It is necessary, for the better understanding of what we are about to expose, that our readers should bear in mind,—

First. That Mr. COOPER delivered the clinical remarks, which may be found in THE LANCET for December 9, at *University College Hospital*, on the 31st of October; that is to say, not long *after* the death of his patient, but *before* any strictures on the conduct of Mr. COOPER had appeared in the pages of this Journal. The remarks, as Mr. COOPER truly affirms, were *copied* by our reporter from Mr. COOPER's *own notes*, and published by us without alteration.

Secondly. That the lecture, addressed to the surgical class, in *University College*, on the 21st of November, was delivered *after* the publication of the charges which we brought against Mr. COOPER, in relation to his treatment of JAMES CHAPLIN.

We now proceed to confront the "before" and the "after" statements of Mr. COOPER, and, having so done, we shall fearlessly leave the decision on this lamentable affair to the judgment of an impartial public.

In setting down these confronted passages, the following facts should be kept fixedly in remembrance:—SAMUEL COOPER delivered two discourses on the case of JAMES CHAPLIN;—one on the 31*st of October*,—a *fortnight* after the patient's death,—and the other on the 21*st of November*, *five weeks* after the patient's death. *In the interval*, that is between the 31st of October and the 21st of November,—the imbecile surgical treatment, and the neglect of the patient, were *exposed in the columns of* THE LANCET. Now, mark the confronted passages:—

Mr. Samuel Cooper on the 31*st October.*

REACTION.

"The man had been in a state of collapse, "with a pulse hardly susceptible, and a "pallid cadaverous countenance," &c. But, says Mr. COOPER, "the man continued in "the same state until one o'clock, *when the* "*pulse began to rise*," &c.

VOMITING.

"....Until one o'clock, when the pulse "began to rise, but again sunk on the com- "mencement of *severe* and *constant vomiting* "of bilious matter, accompanied by *tender-* "*ness of the epigastrium.*"

CONSTIPATION.

"Hence *the confined state of the bowels*, and "the sickness, during the short time the man "lived, threw but little light on the ques- "tion, whether any portion of bowel really "protruded, and was strangulated in the "wound."

POST-MORTEM APPEARANCES.

"The cavity of the abdomen, thus expos- "ed, was found extensively occupied by "effused blood, which amounted, perhaps, "altogether to three or four pints. The in- "testines and peritoneum were highly vas- "cular, and lymph was poured out, so as to "render the bowels adherent to one an- "other."

"*A portion of small intestine protruded into* "*the wound, and was so pinched, or strangu-* "*lated, in it, that when air was blown into it* "*for the purpose of ascertaining whether there* "*was a wound in the protruded part, none of* "*it passed the stricture.*"

Mr. Samuel Cooper on the 21*st November.*

REACTION.

"The man had been in a state of collapse, "with cold skin and cold extremities, a "pulse scarcely perceptible, and a pallid "cadaverous countenance from the first. "*Such condition never ceased*," &c.

VOMITING.

"As for *constant* vomiting it did not "exist," &c.

"He had one motion from a clyster, and "was *occasionally* troubled with vomiting."

CONSTIPATION.

"Constipation, indeed! Why, the man, as "the note-book has recorded, had one mo- "tion during the short time he lived!"

POST-MORTEM APPEARANCES.

"The cavity of the abdomen was found "extensively occupied by effused blood, "which amounted altogether to three or "four pints. The intestines and peritoneum "were highly vascular, and in some places "lymph was poured out, so as to render the "intestines adherent to one another."

"*It is true that a knuckle of intestine had* "*insinuated itself into the wound again, but* "*this had happened subsequently to its reduc-* "*tion in the morning, and probably from the* "*efforts of vomiting.*"

We have, it appears, been accused by Mr. COOPER of "inconsistencies," "contradictions," and "wilful misrepresentations;" but we now fearlessly appeal to the profession, whom we entreat to compare carefully the above paragraphs one with another, whether we have been guilty of misstatements, or whether a still heavier charge might not be laid by us upon the shoulders of Mr. SAMUEL COOPER, were we ungenerous enough to oppress a fallen man.

Is it not, we ask, a gross, nay a *wilful*, misrepresentation, to suppress the most important fact connected with a circumstance, for the evident purpose of procuring shelter from disgrace?

Let the reader compare the two paragraphs comprised under the heading, "*post-mortem* appearances," and then ask himself, Why did Mr. SAMUEL COOPER totally omit the concluding paragraph, which is marked in italics, of his lecture delivered on the 31st of October, from the elaborate account of the *post-mortem* appearances which he addressed to his surgical class on the 21st of November? Is this, or not, a *wilful* omission? Is it not a glaring misrepresentation to suppress altogether the important fact *of the gut having been so pinched, or strangulated, in the wound, that even air could not be made to pass the stricture?* But our readers may ask, How happens it that Mr. COOPER could admit the existence of strangulation on the 31st of October, which he subsequently denied in so positive a manner in his lecture of the

21st of November? Of this inconsistency we have only one explanation to offer, *viz.*, that the lecture in *October* was delivered before any portion of this unfortunate affair had been exposed to the public—before Mr. Cooper had the slightest suspicion of the chastisement which awaited him, and which he so richly merited; in that lecture, therefore, a less partial and coloured account of Chaplin's case might be expected to be found. On the contrary, the lecture of the 21st of November was concocted for a particular end and purpose; it was manufactured *after* our exposure of Mr. Cooper's imbecility, and hence intended to throw a cloak over the barrenness of his surgical pretensions; it was, as Mr. Cooper himself facetiously remarked, a *prepared* and *premeditated* report of an *extemporaneous* lecture, and hence, in endeavouring to give such a colour to the bayonet-wound case as might be least unfavourable to his professional reputation, Mr. Samuel Cooper has fallen into the inconsistencies, and been guilty of the *wilful* misrepresentation, which may be detected by a simple perusal of the statements which we have placed in juxta-position.

Our readers cannot fail to remark, that Mr. Cooper purposely omitted on *Nov.* 21, notice of the *pinched and strangulated condition of the gut, through which not even air could be forced.* Instead of this fact, which would have been fatal to the views that he was desirous of inculcating, Mr. Cooper, with a composure only to be explained by a "blessed" ignorance of the first principles of surgery, assures us, that "It is true a knuckle had insinuated itself "into the wound *again;* but this had hap- "pened *subsequently to its reduction in the* "*morning;*" and in another part of his statement he tells us, "I found the external wound "closed, and a soft elastic swelling behind it, "which, *on gentle pressure being made, slowly* "*and gradually returned;* I was then unable "to decide whether the swelling consisted "of intestine or effused blood."

Cunning people, it is said, often overshoot their mark, and the attempt of Mr. Cooper, evinced in the passage we have just quoted, bears abundant testimony to the truth of this maxim. There was no strangulation of the gut, cries Mr. Cooper, because I returned it in the morning, not knowing whether it was intestine or effused blood, —or, he might have added, effused fæces. What an admirable specimen of surgical skill does this avowal exhibit on the part of a London Hospital Surgeon! So, then, Mr. Samuel Cooper, according to your own showing, you kept poking your knuckles into the unfortunate man's belly, until you actually pushed back an intestine which was perforated through and through by a bayonet, into the cavity of the abdomen. Surgeon, forsooth! The youngest reader of your "First Lines" would have known better. To what purpose, we ask you, were your manipulations directed? The swelling, you say, might have been composed of blood; why endeavour to force this back into the abdomen? If your own statement be true the man's abdomen was already full enough of blood. Had the "soft swelling" been composed of feculent matter what a pretty mess you would have made of the affair; but, fortunately for you, the intestine was too firmly embraced in the wound to admit of its reduction by simple pressure, and the only possible explanation which can be offered for your manœuvering is, that you had some inkling of the existence of strangulation of the gut. This explanation, however, which we offer in a spirit of charity, leaves you but in a very sorry plight. "The intestine," you say, "was probably wounded." Why, then, attempt to reduce it? The safest place for it was in the wound, and there it should have been allowed to remain, undisturbed, until the first symptoms of strangulation set in, when the method of treatment explained in your lecture delivered fifteen days *after* James Chaplin's death, might have been applied; then, indeed, you might have consoled yourself with the reflection *that no important indication had been left unfulfilled.*

But we have to offer one or two

more topics for Mr. Cooper's reflection. Our readers have not, probably, forgotten some half dozen medico-legal questions which we thought fit to address to Mr. Samuel Cooper touching the circumstances attending the treatment and *real* cause of the death of the unfortunate James Chaplin. Like every witness who is unable to answer searching interrogatories, Mr. Cooper becomes furious, and to our question, "Would "mere effusion of blood have produced con- "stant vomiting and constipation?" he answers, "Constipation, indeed! why the "man, as the note-book has recorded, had "one motion during the short time he lived. "According to the rule of practice no purga- "tive was given, from an expectation that "the intestine was wounded; as for constant "vomiting, it did not exist." Now, reader, pray turn to the parallel columns which you will find in another part of this article, and then estimate in your mind the value of Samuel Cooper's testimony.

No constant vomiting, indeed! Why, in the bungler's own lecture, aye, and in the records of the case preserved in the case-book of *University College Hospital*, the existence of *constant vomiting* is expressly mentioned. There was no constipation; yet Mr. Cooper mentions, "the *confined state of* "*the bowels*, and the sickness during the "short time the man lived," &c. Constipation and *confined state of bowels* are, to our apprehension, synonymous terms. But, rejoins Mr. Cooper, the man passed one stool. Some fæcal matter, indeed, is represented to have come away with a clyster which had been thrown up, but whether this could be designated by the name of "stool" is a question which might fairly admit of discussion; not so the impropriety of administering two clysters to a man who had just received a penetrating wound of the abdomen, with *probable perforation* of one or more folds of intestine.

"According to the rule of practice," says Mr. Cooper, "no purgative was given, "from an expectation that the intestine was "wounded;" yet a few sentences before this, the same surgeon assures us that two clysters were administered, and that one of them produced an evacuation from the bowels. There is something so mysterious, so incomprehensible, so utterly inconsistent in all this, that we must abandon it to the ingenuity of our readers, without attempting to understand it ourselves.

If purgatives or laxatives be contraindicated in cases of penetrating wounds of the abdomen, probably complicated with lesion of the lower bowels, it seems to our poor understanding, that clysters are equally so. If a man have a wound in his colon of nearly an inch in length; if the intestine, after having been lodged underneath, or between the abdominal muscles, should be returned by some ignorant and meddling practitioner into the abdomen; and if, after all this has taken place, two clysters be administered, with the effect of producing an alvine evacuation, we are at a loss to understand by what providence the unfortunate patient could escape the natural consequence of such proceedings, viz., effusion of the clysters, or of fæcal matter, into the cavity of the peritoneum. But the wonders of this unhappy yet instructive case do not terminate here.

Mr. Cooper assures us that the peritoneum in contact with the effused blood, which amounted to between three and four pints (according to him), was in a state of *violent* inflammation. The man, he remarked, lived about twenty-four hours after the receipt of the accident, was in a state of perfect collapse (according to Mr. Cooper, again) during the whole of that time, and yet the effused blood produced violent and rapid inflammation of the serous membrane, evinced by effusion of coagulable lymph, and agglutination of the bowels!

Now, we do not pretend to be so deeply learned in surgical works as is Mr. Samuel Cooper, but we defy him to search the annals of surgery, and produce anything like an analogous occurrence; and with this defiance we close our observations for the present.

ST. GEORGE'S HOSPITAL.

CASES OF PERIPNEUMONIA.

In investigating this affection of the thoracic viscera, Dr. Hope, in his "Tables of Auscultation," gives the following summary of symptoms which occur during its progress:—

Physical Signs of the First Stage of Peripneumonia, or the Period of Engorgement.

1. Incipient rhonchus generally in the inferior lobes, and best heard by aural or stethoscopic sound in the back.

2. Incipient dullness on percussion, which is not very distinctly made out until the end of this stage.

3. Expectoration of sputa very viscous, of a pink or fawn colour, given to them from blood; they usually appear after the crepitant rhonchus has set in, and are not perfectly characterised until the termination of this stage.

Physical Signs of the Second Stage, or the Period of Hepatisation.

1. Crepitant rhonchus ceases from the air-cells, owing to their being closed up by effused lymph forming hepatisation.

2. Distinct dullness on percussion, from the lobes being solidified by the permanence of the precedent symptoms.

3. Bronchial respiration, and audible bronchophony. This arises from the *solid* lung being a better conductor of sound, the respiratory voice and murmur in the deeper-seated and larger bronchi are conducted more easily to the ear, though these are inaudible in the normal state of the lung, from its spongy texture being a bad conductor of sound.

4. The respiratory visceral movements of the affected side are diminished, from the solidified structures being inexpansible.

5. The sputa is in this, as in the first stage, but gradually losing its pinky colour, and becoming of a rusty brown.

At the termination of this second stage a *resolution* of some of the preceding symptoms takes place; all its physical signs gradually disappear, and there is a return of the crepitant rhonchus, though it is now of a more humid character than before, and, after passing from "crepitant" into "subcrepitant," and then into "mucous rhonchus," it is eventually replaced by the permanence of the natural respiratory murmur. These changes are caused by the air-cells and minuter bronchi being re-opened and becoming charged with a liquid secretion, which, after passing from the smaller to the larger bronchi (where it eliminates "mucous rhonchus") is at last wholly removed by absorption or expectoration.

Physical Signs of the Third Stage, or the Period of Purulent Infiltration.

1. All the signs of the preceding stage are persistent, with the exception of the sputa being thin, of a dirty-brown colour, and muco-purulent in character.

2. There is an audible coarse mucous rhonchus developed over the regions occupied by the larger bronchial tubes caused by the abundant presence of muco-purulent matter.

Diagnostic Distinctions between the preceding Second and Third Stages, and Pleuritic Effusion.

In pleuritic effusion there exists,—

1. Œgophony.

2. There is no discernible presence of crepitant rhonchus anywhere, whereas in peripneumony the parts contiguous to the hepatised portions generally, in the first stage, yield a crepitant râle or rhonchus.

3. There is no expectoration of blood-tinged or fawn-coloured viscous sputa.

Case 1.—Francis Norman, a negro, aged 15, admitted June 12th, under the care of Dr. Seymour. He states that he has been suffering for the last week with severe pain in the chest, accompanied with cough which severely aggravates his sufferings, and scanty mucous expectoration. On drawing in a deep breath it is evident that he cannot fill the lungs, owing partly to severe pain, and partly to incipient solidification being present in their cellular tissue; the pulse is quick and small, 110; the bowels are open; the only means he has used have been the application of leeches and a blister. He was ordered to be immediately bled to twelve ounces in a full stream, which was to be repeated again in the evening, unless amelioration of pain had previously occurred, and a *saline draught*, with *a quarter of a grain of the potassio-tartrate of antimony* given every four hours.

13. Not having been much relieved by the bleeding it was again repeated to-day to the same amount, conjoined with which *twelve leeches*, and *a blister* were to be applied in the evening to the right side, where respiration was most difficult and painful.

15. The power of free inspiration is increased, the mucous expectoration has diminished; pulse 110, and stronger; skin cool; anxiety of countenance less. *The dose of the antimony was increased to half a grain.*

17. Amendment of symptoms progressing; he can lie with more ease on his back; the pain and cough are better; expectoration has improved; flow of urine abundant and natural in appearance; pulse 94, weak. *The dose of the antimony was again slightly increased*, and *a senna draught* was ordered for the following morning if necessary.

20. Every symptom has progressively improved since the last report; there exists no

pain in the chest; the appetite is returning. The *saline draughts* were ordered to be taken only every six hours.

26. Convalescent; he complains of some pain in the axilla caused by the blister irritating some of the axillary glands, to relieve which a sub-axillary cataplasm was prescribed. Medicines to be continued as before. Ordinary diet.

July 3. Chest well; axillary pain still troublesome, caused by erysipelas.

6. Going on well; ordered to take a *Cinchona draught* three times daily.

8. The erysipelas has left the axilla, and there is now a slight blush of it over the lumbar region, the constitutional symptoms are, however, very slight.

12. Quite well in every respect. Made an out-patient.

Case 2.—James Millstead, aged 37, under Dr. Seymour. He was brought in on the 15th of June, suffering from a severe rigor, which terminated in a profuse diaphoresis in a few hours. He now complains of acute lancinating pain over the eighth rib on the left side, which is much aggravated by inspiration; the tongue is white and dry; the pulse 112, quick and hard. He was immediately bled to sixteen ounces, and the following powder administered every four hours:—

Chloride of mercury, three grains;

Opium, half a grain. To be washed down with a *nitre draught*. *Fever diet* was ordered. In addition to these remedies the head was ordered to be kept cool by a constant application of *vinegar and water*; he was to be *cupped* in the evening over the part affected, and a *blister* applied in immediate succession if the pain did not previously subside.

16. On visiting him this morning, we found that all the preceding remedies had been put into active use, and that the blister was on still. The blood drawn was much buffed, the thoracic pain greatly relieved; pulse 100; skin warm; bowels confined, for the relief of which a *senna draught* was ordered immediately.

17. To-day there is no pain on inspiration, nor any cough; pulse 84, soft. The powder to be taken only every six hours. *Fish diet.*

19. There is no pain whatever, except on coughing, or on taking in a deep inspiration; cough is slight, accompanied with mucous expectoration; pulse remains good. He was ordered

Decoction of Senega root;

Decoction of bark; of each one ounce;

Aromatic spirits of ammonia, twenty-five drops, to be taken twice a day, and some *common linctus* taken for the cough; *a spermaceti draught, with fifteen drops of tincture of opium*, to be taken at bedtime.

22. He complains of having had several rigors at night, which prevent his sleeping, but do not appear to have affected him otherwise; he inspires freely and without cough; pulse natural. Beef-tea and arrowroot for diet.

23. Cough somewhat troublesome; expectoration close and viscid; pulse 96, weak; bowels open; no appetite; great thirst.

26. No bad symptom left. To take two ounces of port wine daily.

July 4. Convalescent; to go out.

Case 3.—George Gillman, a negro, aged 24, admitted June 17th, with the following symptoms:—He has great pain in the chest, especially on the left side, with great difficulty of breathing, in every position; the tongue is loaded, and white in the centre, with scarlet edges; urine scanty, high coloured, and loaded with deposit. *He was bled to twelve ounces. Five grains of calomel given internally, and twelve leeches applied externally in the evening*, with a *senna draught*, early to-morrow morning. A *saline draught*, with 25 *minims of antimonial wine*, every four hours.

19. The pain is better, but on inspiration it is seen that he fills the left lung very imperfectly; some slight mucous expectoration; tongue still white, and loaded; pulse 112, full; face flushed; blood buffed and cupped. He was ordered to be again *bled to twelve ounces*, and to lose the same quantity of blood by cupping in the evening, followed up by a blister. A *saline draught*, with *one quarter of a grain of the potassio-tartrate of antimony*, every four hours. Acidulated barley-water for common drink. In the evening the apothecary increased each dose of *tartar emetic* to *half a grain.*

20. Bleeding was again ordered to the extent of twelve ounces, and after two attempts, only four ounces could be drawn, owing to syncope supervening. Medicines to be continued.

21. To-day the tongue is white and loaded, and on inspiration it appears that he is unable to fill the left lung, owing to effusion of lymph into its cells; pulse 120, not full; skin hot, and diaphoretic; no expectoration; much expression of pain in the countenance, though he says that he feels none. He was slightly delirious all night, which continues up to the present time. The dose of *tartarised antimony* was increased to one grain in each draught, and a *senna draught* was ordered to be given directly, the bowels not being sufficiently open.

22. To-day there is much delirium remaining; pulse 110; bowels open. He has not vomited, but there has been a great disposition to nausea for the last few hours, in consequence of which the draught was ordered to be given only every six hours; the bowels have been freely opened by the medicine. *Three grains of calomel*, and a *soap pill with opium*, were ordered at bedtime, with a *senna draught* early to-morrow morning.

23. He is on the whole better to-day; the

tongue is still much loaded, but moister; pulse 120; slight purulent expectoration.

24. There is no delirium to-day, and he answers questions quite correctly; tongue moist; pulse 100, and regular. He can inspire better, without either pain or cough being excited.

26. No delirium; he can inspire freely, with a trifling degree of pain only, and no cough; pulse 100, not strong; tongue brown in the centre and white at the edges. The bowels are purged by the *tartar emetic*, which has been discontinued, and *five grains of mercury with chalk, and Dover's powder*, are to be taken instead at bedtime. Barley-water with gum for ordinary drink, and beef-tea and arrowroot for diet.

28. Much better; no pain in the chest; cough rather troublesome at night, when he brings up much mucus from the chest and larynx; tongue white; pulse 96, moderately strong; skin cool.

29. Going on well; the powder to be repeated every night.

30. He complains of general superficial pain on each side of the chest, and the respiratory murmur over the base of the left lung is scarcely audible.

July 3. He complains only of great bodily weakness, for which he was ordered to take two ounces of port-wine daily.

7. He complains of some little pain in the left side, for which he was ordered a small *blister*.

15. He has had some severe pain in the back for some days, over which an *opium plaster* was applied, and a *saline draught, with five grains of Dover's powder*, ordered every night.

Aug. 9. He was this day made an out-patient.

Case 4.—Mary Donovan, aged 34; she states that about five days ago she was attacked with all the characteristic symptoms of pneumonia, for which she was bled, without, however, experiencing much relief. On her admission her most prominent symptoms were great feebleness and exhaustion, with much pain on respiration. To relieve the first of these symptoms, she was ordered some warm beef-tea, whilst the reaction caused by this was to be immediately checked by drawing sixteen ounces of blood from her arm. In the evening of her admission we found that the blood was very much buffed and cupped, and that great difficulty of breathing still existed; she was again bled to the same amount, and the following powder ordered to be taken every four hours:—

Chloride of mercury, three grains;
James's powder, four grains;
Opium in powder, half a grain.

Half an ounce of *castor-oil*, in *peppermint-water*, to be taken immediately.

22. The blood drawn last night was very much buffed; pulse 100, soft and regular.

23. There is scarcely any pain in the chest, but much cough is present, accompanied with muco-purulent expectoration. Mucous rhonchus very distinct; pulse 90, quiet and regular. The powder was ordered to be taken every six hours.

26. She complains to-day of some pain on coughing; she expectorates freely a frothy, mucous expectoration. She lies on the affected side; skin warm; slight headach brought on by coughing; pulse hard; tongue furred; bowels not open.

Compound tincture of camphor, one drachm;
Acacia mixture, two drachms;
Syrup of poppies, one drachm;
Almond emulsion, ten drachms.—To be taken every four hours.

28. She is suffering to-day from great difficulty of breathing, owing to the larger bronchial tubes being clogged by a thick mucus; the expectoration, nevertheless, continues very great, and there is a free mucous rhonchus heard over the whole bronchial region. She complains of no pain but on coughing; pulse 96, small and weak; much headach from coughing; bowels confined. The draughts were to be continued. *Four grains of chloride of mercury were to be taken directly*, and a *senna draught* four hours afterwards. A *saline draught*, with *eight grains of Dover's powder*, to be taken at bed-time.

30. At the time of our visit she was lying on her right side, where she complained of some pain on coughing. There is extensive mucous rhonchus heard over the whole chest, especially over the right region.

July 5. She has continued her medicine until to-day, yet there still remains some pain in the right side, over which she was ordered to be cupped to ten ounces, and the following medicine was prescribed, to allay the cough:—

Acetate of morphia, one quarter of a grain;
Simple oxymel, two drachms;
Water, ten drachms. To be taken every night at bedtime.

19. Greatly improved, only requiring country air to make her quite well.

Case 5.—Daniel Reardon, aged 42, admitted June 21, with precisely the same characteristic symptoms as the last patient. Like her, the first medicine he was ordered was warm beef-tea, following up this by a sixteen-ounce bleeding. In the evening the blood was found buffed, and there was some sharp lancinating pain referred to the inferior border of the thorax, on the left side, where ten leeches were ordered to be immediately applied, and a hot cataplasm afterwards. *Three grains of chloride of mercury, with half a grain of opium*, every four hours, and a *half an ounce of castor-oil* early on the following morning.

22. None of the worst symptoms being much relieved, he was again ordered to be

bled, and a blister placed over the chest. Milk diet.

23. To-day he is somewhat better, and complains very little of pain in the chest; there is still much cough present, and he expectorates freely a fawn-coloured expectoration; pulse 78, full, and of moderate strength; tongue brown, bowels open; the *calomel* and *opium* to be continued.

24. To-day the mucous expectoration is pretty free, and untinged with blood. The pectoral inspiration is imperfect, but unaccompanied by pain; pulse natural, but languid; tongue white; the *calomel* and *opium* pill to be omitted, and to take instead,

Soap pill with opium, three grains;

Compound extract of colocynth, three grains, every night at bedtime. Beef-tea and arrowroot for diet.

26. Inspiration better and without pain; complains much of cough; pulse 80, regular; bowels confined; tongue clean. A *senna draught* to be taken directly.

27. Much the same. The following draught for the purposes which its component parts indicate:

Sulphate of magnesia, one scruple;

Burnt magnesia, ten grains;

Tincture of opium, four minims;

Peppermint water, ten drachms; to be taken every four hours.

29. Going on well; he was ordered to take ordinary diet, without vegetables or beer.

July 7, Complains of some slight return of pain in the side, for which he was ordered to be *cupped* to twelve ounces over the affected side, and a *blister* applied near the part as soon as possible afterwards. A *senna draught* to be taken directly.

10. Every good symptom present.

19. Having continued well up to this day, he was ordered to join the company of the "thankfully restored," in the board-room, on the following Wednesday, having done which, he was to be discharged immediately "quite well."

(*To be continued.*)

UNIVERSITY COLLEGE HOSPITAL.

CASES OF AGGRAVATED STRICTURE OF THE URETHRA, WITH COMPLETE CLOSURE OF THE ANTERIOR PORTION OF THE CANAL, FOR A SERIES OF YEARS, CURED BY OPERATION.

STRICTURE is always a troublesome and dangerous disease, and unless attended to in a proper manner, leads to serious mischief, and often to a fatal result. Even in a slight form it is attended by a subversion of the action of the parts, and a weakness in the performance of the several functions; very often it excites a prejudicial influence on the nervous system. The cases treated in the in the *University College Hospital*, by Mr. Liston, are generally of a bad kind, and often the consequence of injury from without. Very often the patients are admitted on account of retention, with or without abscess of the perineum, and extravasation of urine into the loose cellular tissue. Very many of the cases are complicated by numerous fistulæ, and not infrequently false passages, the result of incautious use of instruments, at some time or other, also exist. The following case exhibits well the symptoms of the disease, the sufferings of the patient, and the advantage of decided measures in bringing about a cure.

CASE.—J. W., ætat. 35, admitted Sept. 21, 1837, a carpenter. Has had stricture of the urethra for the last ten or eleven years, though not to any extent, only retarding the evacuations of urine in time of cold weather, or after excessive drinking. On the Friday previous to his admission into the hospital, whilst walking upon some joists upon which the flooring had not been placed, he slipped and fell astride one of them, whereby the perineum came in violent contact with the sharp edges of the timber. Very considerable swelling followed the injury, and the parts became of "all colours." He went to a medical gentleman, who prescribed cold lotions and twenty-four leeches to be applied to the part. A catheter was passed into the urethra, but before it reached the bladder, a cupfull of thick blood came away, and no water was drawn, nor did he get any urine evacuated until the following Wednesday (which was the day before his admission here), when a surgeon drew off, by the catheter, between two and three pints; the instrument was kept in the bladder until shortly before his admission; he has felt relieved since the water was drawn off; feels very weak, as he has taken very little food since the retention came on; bowels open; pulse small and weak; tongue white and moist; scrotum and penis very much infiltrated, red, and tense; there is also swelling in the perineum. Fomentations applied; no inclination to pass his urine; no fullness above the pubes.

Vespere. Mr. Liston saw the patient, and made a free incision into the swelling in perineo, from which a quantity of urine mixed with pus and blood, escaped. A poultice applied.

22. Feels much easier; has passed his urine through the natural passage during the night.

23. Urine escapes entirely through the opening in the perineum; infiltration of scrotum and penis subsiding.

25. A catheter was introduced and retained for 48 hours.

October 12. The opening in the perineum contracting, the urine passing both through it and the natural passage; health very much improved; the catheter has been in-

troduced at intervals of four or five days, and gradually increased in size.

31. Dismissed as an out-patient. He promises to return every week to have a catheter passed.

Nov. 29. A full-sized catheter passed without much difficulty; the fistula nearly closed.

From neglect this patient, Mr. Liston said, might have been lost, had the abscess given way into the loose tissue, so as to permit extensive effusion of putrid matter, and acrimonious urine; by neglecting the stricture in the anterior part of the urethra, the urine might have found its way permanently by the new route, and the patient been placed in the same awkward predicament, as in the two following cases, before their application to a proper quarter for relief. The catheter, it would be observed, was always used with the utmost gentleness and caution, and at considerable intervals; it was almost uniformly made to glide along without any stretching of the organ, and merely by the use of one hand.

G. F. S., aged 54 years, while serving in the Royal Artillery during the Peninsular war, received an injury from being thrown with violence on the pummel of the saddle, which brought on stricture. In 1811 he returned to London, from Lisbon, and applied to an hospital surgeon, who endeavoured, without success, to pass a bougie. He afterwards tried to introduce an armed one, but the attempt was made with great violence, and caused profuse hæmorrhage from the urethra, which was followed by violent inflammation of the passage. The urine, he says, dispersed over the lower part of the body; for this an opening was made in the perineum; mortification to a considerable extent supervened; when the sloughs separated, a fistulous opening into the urethra was established, and the natural passage anterior to the scrotum gradually contracted. After six years he applied to another surgeon, who succeeded in introducing a very small catheter by the natural passage, and continued to pass instruments for three months, when he was obliged to leave town. The natural passage again closed, and the urine came away entirely by the fistulous opening. After a time a callous growth took place around the margin of the fistula, which increased in size until it completely closed the opening, and he applied to Mr. Liston (in 1832), not having passed any urine through the natural passage for fourteen or fifteen years,—all dribbled through the fistulous openings, and that, latterly, with great difficulty; the tenacious mucus mixed with the urine often increased the difficulty so much that he has frequently got out of bed nine or ten times in a night without being able to make a teacupfull, and frequently none at all. He has had frequent attacks of spasms and rigors. Mr. Liston cut through the callous growth into the dilated part of the urethra behind the contraction, and also forwards to the point of a catheter passed from the anterior part; this was lodged in the bladder for forty-eight hours; the urine which passed was thick and treacly. After about fourteen days, when the inflammatory symptoms had subsided, Mr. Liston passed a small catheter by the natural passage, and continued to pass instruments from time to time, until, in about three months, No. 6 catheter was passed, the fistulous opening gradually lessening, but it never entirely closed, the urine passing at times partly through it, at others entirely by the natural passage. He was much relieved, but the passage began again to contract, and became gradually less and less, when, in November, 1836, a surgeon endeavoured to pass a metallic bougie, but failed; the attempt caused violent inflammation and some sloughing of the perineum, by which the fistulous opening became larger than before; the urine again passed by the natural passage, but at times it became spasmodically closed for several hours, the spasms being usually relieved by laudanum and ether. He remained in this condition, getting, however, gradually worse until July 25th, 1837, when he applied at the *University College Hospital*.

On his admission, one of the house-surgeons introduced a very small catheter (½ No. 1). When Mr. Liston saw him he was informed that No. 3 or 4 had been passed readily, and he made an attempt with a catheter of this size, but could succeed only in wedging it in a contraction in the anterior part of the canal, about four inches from the orifice. Subsequently Mr. Watts, to relieve a spasmodic state of the parts, causing increased difficulty in voiding the urine, almost amounting to retention, introduced the small instrument, and relieved the patient.

Aug. 3. Feels very low to-day; pulse good; bowels open in the evening; had spasmodic closing of the passage, and was ordered the hip-bath, and laudanum and ether, without any good effect. At his earnest request Mr. Watts passed a No. 1 catheter, and relieved the bladder.

4. Is much better, and passed his urine in a moderate stream, high-coloured, ropy, and alkaline.

5. Bowels much relaxed, and great pain is experienced.

7. Bowels less relaxed; spirits very low; urine passed with difficulty, not so high coloured, but smells very strong and alkaline.

8. Had spasmodic closure to-day, which was relieved by laudanum and ether. Mr. Liston passed a No. 2 catheter, which is to be retained if possible.

9. Complains of great pain; the instrument is kept in.

10. Instrument taken out; the urine passes in a pretty full stream.

12. Great pain in the perineum and along the back; bowels confined, with bearing-down pain of rectum. Ordered a suppository, gr. v. of *soap pill* with *opium*, and to take ʒss of *castor-oil*.

13. Bowels open; pain still severe; urine escapes freely.

14. Much better in every respect.

17. Going on well; had spasmodic retention, which was relieved by the laudanum; urine passes freely in general.

Sept. 12. Continues to improve; No. 2 and 3 catheter introduced every fifth or sixth day.

20. Going on well; No. 4 catheter introduced.

Oct. 6. He was made an out-patient, and ordered to come occasionally to have a catheter passed; his health is now very good, and the urine passes freely by the urethra.

Nov. 29. Has not been able to come to the hospital for some time; Nos. 3 and 4 passed without difficulty, and it is proposed to introduce a larger size the next time he presents himself.

W. K., ætat. 43, admitted Nov. 22, 1837. A coachman, of sanguineous temperament; about thirteen years ago he suffered an injury in the perineum, by falling into a dung-barrow, from the height of about fourteen feet, in consequence of a ladder giving way; not feeling much hurt he got on horseback, within about twenty minutes after the fall, and in leaping the horse over a bar, he was thrown against the pummel of the saddle; this additional injury produced immediate insensibility to such a degree, that he fell from the horse backwards; the perineum and penis immediately became very much swollen, and he passed no urine for forty-eight hours; he did not ask for medical assistance, but merely applied a poultice, and took some opening medicine.

On the third day after the accident the urine came dribbling away, involuntarily, from the urethra, and after a few days the swelling of the perineum and penis subsided, so that he was able to sit up and go about a little. For three months he continued in a weakly state, suffering from bearing-down pains and a sense of fulness about his bladder, his urine not being voided in a stream. About three months after the accident he consulted the surgeon of a dispensary, who introduced a sound into his bladder every morning. On withdrawing the sound the urine passed in a stream, but after a few hours had elapsed he again experienced difficulty, and the urine only passed away in drops. After continuing under this gentleman's care four months, he went into the country, labouring still under dysuria. During his residence in the country he underwent no surgical treatment. About twelvemonths after the injury he was admitted into *St. Bartholomew's Hospital*, suffering severely from the symptoms above described; having, in addition, a swelling in the upper and front part of the scrotum. This went on increasing, and, when about the size of a hen's egg, an incision was made into it; this was followed by the discharge of a great quantity of urine, in a stream, which rose to a considerable height; by this opening he discharged the contents of his bladder, and was greatly relieved. Previously to this several attempts were made, by several of the surgeons, to introduce the catheter, but without success; afterwards none were made. His urine ceased now entirely to pass through the penis, and was only discharged through the opening in the scrotum, and in this state he has continued for the last twelve years. For the first year after this opening was made his urine passed from him incontinently, but subsequently he used to retain it the usual period, and to pass it in a continuous stream.

Until last June he was able to follow his usual occupations; then he strained himself, by endeavouring to lift a carriage with his back; this was followed by the discharge of some ounces of blood through the opening in the scrotum, which became rapidly swollen; to it he applied poultices and fomentations, and took some aperient medicine. About ten days after the strain an incision was made by a medical gentleman into an abscess which had formed a little below the original opening in the scrotum, and through this the urine has escaped ever since. About two months ago another abscess formed in the upper part of the right side of the scrotum, for which, as well as his stricture, he consulted Mr. Liston, at his own residence, who ordered him to use fomentations and poultices, and to keep as quiet as possible. He also expressed a wish that he should become an in-patient of the hospital; but his circumstances were such that he could not give up his avocations, in which he has been engaged until the 15th inst. About a month ago the last-mentioned abscess burst, and since then his urine has been discharged through three openings in the scrotum. Since last June his urine has deposited a considerable quantity of mucus, which becomes discernible a short time after the urine has been voided.

Present state.—The scrotum appears red and swollen, having three openings, through each of which the urine passes; they also discharge fœtid pus abundantly; complains of almost constant pain in the perineum, which is of a throbbing character; he cannot sit without pain. Since last June he

has lost flesh considerably; thirst troublesome; his sleep has been bad for some time, in consequence of his sufferings.

23. Has been seen by Mr. Liston, who made an incision with a bistoury into a large cavity in the perineum; this he did in the median line, to avoid blood vessels; he then introduced into the urethra a small catheter, which could not be passed down more than about two inches and a half from the orifice, the passage being blocked up by a dense substance. Finding this, he introduced a small hydrocele canula, and subsequently a stilet, by means of which he pierced the obstruction; this he then passed down until it came in contact with a finger introduced into the opening in the perineum. Having thus cleared the anterior part of the passage, Mr. L. introduced a catheter (No. 3), into the urethra, and, after a short time, into the bladder, thus restoring a canal which for above twelve years had, in one part of its course, been obliterated. The catheter was ordered to be properly secured, and to be left in the bladder. A poultice was applied to the perineum and scrotum.

R. *Muriate of morphia*, gr. ss.;
Camph. mixture, ℥ss. H. s. et p. r. n.

24. Passed a better night than he had done for some time; the urine is almost entirely voided through the catheter; very little passes through the openings in the scrotum; feels on the whole better since the operation; bowels confined; appetite good; no great thirst.

R. *Castor-oil*, ℥viii., st. s. Ordered arrowroot and milk.

25. Took some *morphiæ mur.* last night, and slept until this morning; feels considerably more comfortable; complains of no pain; the catheter still remains in his bladder. In the afternoon he was seen by Mr. Liston, who withdrew the catheter, and introduced a fresh one (No. 4); this passed into the bladder with remarkable ease. Tongue whitish; pulse 96, soft, and rather full; bowels regular; appetite very good. D. C.

26. Feels comfortable; slept tolerably well during the night. He states that all his urine is now voided through the catheter. The openings in the scrotum discharge freely.

27. Still improving; complains of no pain except from lying. He voids about a pint of urine at a time; that which is now made appears quite limpid and natural. Slept tolerably well, though the anodyne was discontinued since the 26th; appetite very good; pulse 90, natural; tongue whitish; no thirst. In the afternoon he was seen by Mr. Liston, who withdrew the catheter, and introduced another (No. 7), with great ease.

28. Catheter had slipped partly out of the canal, and was withdrawn by the patient; but only a few hours before Mr. L. had proposed to free him of its presence. In all respects more comfortable; urine passed through the perineal opening; a small slough on the left hip, from the mattrass, of rather soft consistence, having allowed the part to fall down upon the bottom of the bed.

Dec. 1. No. 7 catheter passed without difficulty into the bladder, No. 3 having preceded it; to be retained only for half an hour. In all respects the case proceeds favourably.

These cases, it must be allowed, are very interesting, as showing that, even in the most desperate circumstances, a loathsome and dangerous disease may be combated successfully, and, under any circumstances, a permanent cure can be reckoned upon, if the kidneys are tolerably sound.

MR. SAMUEL COOPER'S NEGLECTED PATIENT.

To the Editor of THE LANCET.

SIR:—I have been somewhat astonished at the "Clinical Lecture" printed by Mr. Samuel Cooper, on his Case of Fatal Bayonet-wound, as I was present at the delivery of his remarks on the case, and find those which are *in print* very different, in many respects, from, and much more diffuse than, those which he *spoke*. Whatever he would imply, in print, as to the sympathy evinced in the lecture-room with him, it is a fact that there were more persons filled with with regret, pity, or a disposition to smile at his abuse, than there were pleased individuals.

Since the publication of your criticisms on his conduct, some of his personal friends called a general meeting of students to censure you for speaking the truth, and defending the case of the neglected poor in our hospitals. A plausible gentlemen took the chair, and stated the object, and a Mr. Price proposed that an address be presented to Mr. Samuel Cooper, but what were to be its contents we could not gather, as the uproar against it was tremendous and deafening; whereupon a student, whose name I did not hear, addressed the meeting in a neat and appropriate speech, which he concluded by saying, that if Mr. Cooper undertook a public trust, he ought to fulfil it, and if he failed in this, no strictures on his neglect could be too severe upon him; and that if he took a public situation he ought to be able to *defend himself* without appealing to his class to give him support when his proceedings were criticised. The feelings of the meeting seemed to accord so fully with these sensible remarks, that it was soon afterwards adjourned, without success on the part of the conveners. If another is held I will communicate the particulars, and am, Sir, your obedient servant,

H. B.

University College, Dec. 13, 1837.